EMERSUB 16, LLC

CORRECTIVE MEASURES IMPLEMENTATION FIVE-YEAR ASSESSMENT REPORT

FORMER KOP-FLEX FACILITY SITE
7555 HARMANS ROAD, HANOVER, MARYLAND
USEPA ID NO. MDD043373935

FEBRUARY 01, 2023

wsp

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PROJECT NO.: 31405608.010
DATE: FEBRUARY 01, 2023

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CERTIFICATION

I certify that the information contained in or accompanying this Corrective Measures (CM) Five-Year Assessment Report is true, accurate, and complete.

As to any portion of this CM Five-Year Assessment Report for which I cannot personally verify accuracy, I certify under penalty of law that this report and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature: 

Name: Stephen L. Clarke

Title: President of EMERSUB 16, LLC

EXECUTIVE SUMMARY

WSP USA Inc. (WSP) has prepared this Corrective Measures Implementation (CMI) Five-Year Assessment Report (Report) to evaluate the performance of the corrective measures implemented at the former Kop-Flex facility property located at 7555 Harmans Road in Hanover, Maryland (the Site). This Report describes the engineering controls to prevent the potential exposure to Site contaminants and the operation (including maintenance activities) and effectiveness of the hydraulic containment and treatment system (the System) in mitigating groundwater quality impacts to the aquifer system. This Report provides information for the January 1 through December 31, 2021, reporting period, and a 5-year review of the operation of the System since startup in 2017. WSP is submitting this report on behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co. The Site is currently owned by Catalent Harmans Road, LLC, a subsidiary of Catalent Cell & Gene Therapy (Catalent).

The following Response Action Objectives (RAOs) with respect to groundwater were previously developed for the Site and continue to be used to gauge progress towards cleanup goals (WSP 2015a):

- controlling migration of groundwater with volatile organic compounds (VOCs) exceeding applicable human health criteria beyond the former Kop-Flex property boundary
- reducing concentrations of VOCs in the aquifer system
- restricting groundwater use on the Site to prevent potential exposure to VOCs present at concentrations above applicable human health criteria

System runtimes during the initial 5 years of System operation were approximately 92%, 94%, 91%, 77%, and 62% during 2017, 2018, 2019, 2020, and 2021, respectively. System runtime was significantly reduced during 2020 and 2021 due to multiple extended shutdowns, both scheduled and unplanned. Periods of downtime were due to scheduled and unscheduled shutdown events, routine maintenance, and replacement of System equipment. There was an extended, planned shutdown of the System from September 21 through October 6, 2021, to conduct cleaning of the specialty resin used to treat the extracted groundwater. In addition, there were a few unanticipated extended System shutdowns due to malfunctioning equipment and a few System components that unexpectedly reached their life expectancy during 2021. The latter reflects a trend that started in 2020. These components included an actuator and actuated solenoid valve for separate automated process valves, and various components of the steam superheater equipment. The valve components were both replaced; the replaced components were repaired by the manufacturer and stored onsite as spares to prevent future downtime.

Based on the 2021 operational data, the System processed approximately 22.5 million gallons of groundwater extracted from the five recovery wells. Since System start up in March 2017 through the end of December 2021, the System has treated approximately 143.8 million gallons of water. Using the influent and effluent VOC and 1,4-dioxane concentrations and the volume of recovered groundwater, it is calculated that approximately 45.8 pounds (lbs) of Site-related VOCs and 19.7 lbs of 1,4-dioxane were recovered from the aquifer during 2021. The removal efficiency of the resin media during 2021 was 100% for VOCs and approximately 98.1% for 1,4-dioxane. A total of approximately 579 lbs of Site-related VOCs and 1,4-dioxane have been removed since initiation of corrective measures through the end of the 2021 calendar year.

Analysis of the treated water (*i.e.*, effluent) samples during 2021 indicated non-detect concentrations of VOCs and non-detect to low levels of 1,4-dioxane, with detected concentrations ranging from 1.1 µg/L to 13.0 µg/L. There was one (1) National Pollutant Discharge Elimination System (NPDES) discharge permit (Permit) exceedance during 2021 for an anomalously high total nickel concentration (995 micrograms per liter [µg/L]) during the November sampling period. WSP did not identify any issues with the laboratory analysis or the System operational data that would explain the total nickel exceedance. A subsequent sample collected later in November had a total nickel concentration of 24.4 µg/L, which is consistent with the historical data for total nickel in the treated water. The elevated total nickel concentration in the early November 2021 sample is believed to have been caused by an isolated, transient "slug" of water with elevated nickel concentrations entering the System.

This data is more or less consistent with that obtained from other years in the 5-year review period. There was only one other Permit-related exceedance during this time: the sample collected in March 2017 had a total zinc concentration of 179 µg/L, exceeding the Permit limit of 120 µg/L. The cause of this exceedance was not identified and is similarly presumed to have been caused by a transient "slug" of water with elevated zinc concentrations entering the System.

The 1,4-dioxane concentrations in the effluent samples reflected a continued increase in the rate of breakthrough for the resin,

a condition that was initially identified during sampling conducted in December 2018 and further investigated during 2019. The reduction in the resin's 1,4-dioxane adsorptive capacity is caused by a buildup of organic constituents at the resin sorption sites that is not removed during steam regeneration. WSP completed an initial cleaning of the resin during February-March 2020, which involved removing the resin material from the System treatment vessels and washing it with a heated caustic solution to remove the buildup of foulants. The cleaning resulted in improved 1,4-dioxane treatment capacity, as evidenced by the monthly sampling results, but did not return the resin to its original treatment capacity. WSP completed an additional cleaning of the resin during September 2021. WSP has undertaken efforts to research methods to pre-treat the extracted groundwater to remove the organic foulants prior to treatment by the specialty resin but has not identified any cost-effective methods. Annual ex-situ cleaning of the resin will continue to be implemented to maintain treatment capacity.

The 5-year review evaluated the overall performance and effectiveness of the System, along with identifying potential changes in the System operation that could enhance the restoration of the impacted aquifer. Based on a review of the 5-year operation of the System, the following conclusions can be made regarding the effectiveness of the groundwater corrective measure:

- The contaminant plumes are horizontally contained within the System inflow/capture area based on groundwater elevations and the presence of constituent concentrations at or below the applicable cleanup levels in monitoring wells on the eastern and western edges of the plumes. The November 2021 sampling event occurred one week after the cessation of groundwater pumping from the recovery wells, and there was no apparent expansion in the width of the contaminant plumes in the shallow or deep zone.
- Vertically, the System inflow/capture area should encompass the entire shallow portion of the Lower Patapsco Aquifer (LPA) based on the depths of the shallow recovery wells. The shallow recovery wells fully penetrate the shallow zone, extending to the top of the aquitard (confining unit) that separates the shallow and deep zones of the LPA. In the deep portion of the LPA, the contaminant plumes are vertically defined by the deepest monitoring well, MW-41D, located in the southern portion of the Site. During 2021, the samples from MW-41D had no detections of CVOCs or 1,4-dioxane. The fact that the 2021 data are consistent with previous sampling results indicates the contaminant plumes are not migrating vertically to the lower portion of the deep zone, which is below the screened interval of the recovery wells.
- For a majority of the recovery and monitoring wells that meet the Mann Kendall statistical requirements, the 1,1-DCA, 1,1-DCE and 1,4-dioxane concentrations exhibited decreasing, probably decreasing, stable, or "no trend" results following the initiation of remedial pumping. The exceptions include two shallow monitoring wells (MW-20 and MW-42), one shallow recovery well (RW-3S), and one deep recovery well (RW-1D) which exhibit increasing or probably increasing trends for one or more constituents.

Based on the results of the 5-year review, WSP recommends the following modifications to the System operation and associated groundwater monitoring activities:

- Complete *ex-situ* resin cleaning activities annually to address continuing resin fouling and maintain System treatment capacity, particularly for 1,4-dioxane.
- Conduct assessment and potential rehabilitation of the System recovery wells every couple of years to address possible biofouling impacts that may affect recovery well performance.
- Reduce the sampling frequency of three monitoring wells, MW-05R, MW-18, and MW-40D, from semi-annually to annually based on concentrations of Site-related constituents being either non-detect or consistently below the applicable cleanup criteria, and that concentrations are not expected to exhibit any noticeable change (*e.g.,* increasing trend) with continued System operation.

1 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

On behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co. (Emerson), WSP USA Inc. (WSP) is submitting this Corrective Measures Implementation (CMI) Five-Year Assessment Report (Report) for the Former Kop-Flex facility property located at 7555 Harmans Road in Hanover, Maryland (the Site). The report assesses the overall performance of the corrective measures since implementation from the completion of the property re-development and startup of the System in early 2017 through 2021, along with providing a separate summary of the operation, maintenance, and monitoring (OM&M) for the hydraulic containment system (System) during the January 1 through December 31, 2021, time period. The Site is identical to the area described as the "Facility" in the U.S. Environmental Protection Agency (EPA) Administrative Order on Consent (Consent Order), Docket No. RCRA-03-2016-0170 CA, Section IV.C.3.

This Report is being submitted in accordance with Section VI.B.2.c of the Consent Order, which requires the submission of a CMI Five-Year Assessment Report every five years. In addition, the Report fulfills the requirement in Section 14.2 of the October 2015 Response Action Plan, Revision 2 (WSP 2015a), as amended (RAP), which requires the submission of OM&M reports to the Maryland Department of the Environment (MDE) on an annual basis.[1] The annual OM&M Report for calendar year 2020 was submitted to the EPA and MDE in July 2021.

1.2 SITE DESCRIPTION

The Site is located at 7555 Harmans Road in Hanover, Anne Arundel County, Maryland. The Site occupies approximately 25 acres and contains three buildings - two buildings used as office and operations space by the current property owner, and a small groundwater treatment facility operated by WSP in the west-central portion of the property (Figure 1). These buildings were constructed during re-development of the property following its divestiture by EMERSUB 16, LLC in 2016. The property is bordered to the north by the Verizon maintenance facility; to the east and south by the Williams Scotsman facility, and to the west by undeveloped land along Stony Run (a tributary of the Patapsco River), a residential townhome development (Harmans Preserve), and Harmans Road.

The former facility was constructed on previously undeveloped land in 1969 by Koppers Company, Inc., a predecessor in real estate interest of Kop-Flex, Inc. Kop-Flex manufactured flexible couplings for the mechanical power transmission industry at the Site. Emerson acquired Kop-Flex in 1996. Manufacturing operations at the facility ceased in late 2012, with all equipment and machining lines subsequently removed from the Site. In December 2014, Emerson transferred the property to its wholly owned subsidiary EMERSUB 16, LLC in preparation for the divestiture of its Power Transmission Solutions business, of which Kop-Flex was a part. Subsequently, EMERSUB 16 sold the property to a third party, TC Harmans Road, LLC, a subsidiary of Trammell Crow Company. TC Harmans Road later transferred the property to Harmans Road Associates, LLC, also a subsidiary of Trammell Crow Company.

From 2016 to early 2017, TC Harmans Road, LLC repurposed the property for commercial use. The redevelopment involved the demolition of the Kop-Flex facility and construction of two warehouse-type buildings separated by a truck loading dock area.

Paragon BioServices, a Baltimore-area biopharmaceutical company, began leasing the property in 2018 and modifying the building interiors for future operations. During late 2019, Paragon BioServices moved into the north building and initiated business operations as a tenant of Harmans Road Associates. Paragon BioServices was acquired by Catalent Pharma Solutions in 2019, operating as Catalent Cell & Gene Therapy (Catalent). Harmans Road Associates was subsequently purchased by Catalent in January 2020 and, in late 2021, changed its name to Catalent Harmans Road, LLC. At present,

[1] Addenda to the approved RAP included the following: Addendum #1 (dated February 24, 2016) involving the deep groundwater extraction wells and treatment system; Addendum #2 (dated April 15, 2016) regarding the management of stormwater with excavation areas created as part of the property re-development; and Addendum #3 (dated June 23, 2016) involving the sub-grade water conveyance piping from the extraction wells to the treatment building.

Catalent is making modifications to the interior of the south building for future business operations along with adding additional structures on the property (*e.g.*, parking garage).

Much of the broader neighborhood in which the Site is located is primarily characterized by residential developments (single-family homes and townhouses) and undeveloped land. A small number of areas, primarily to the north and east, are subject to commercial and light industrial/industrial park uses. The following table summarizes the nearby land uses.

Direction	Operator Name	Address	Property Use
North	Verizon	7545 Harmans Road	Maintenance Facility
South	Williams Scotsman, beyond which is Maryland State Route 100	7539 Harmans Road	Mobile Trailer Distributor – Trailer Storage
East	Williams Scotsman, beyond which are railroad tracks	7539 Harmans Road	Mobile Trailer Distributor – Office/Fabrication Building and Trailer Storage
West	Stony Run with surrounding undeveloped land and Harmans Preserve residential townhouse community	-----	Open space and residences

1.3 SUMMARY OF SITE CONDITIONS

1.3.1 GEOLOGY AND HYDROGEOLOGY

The Site lies within the Atlantic Coastal Plain physiographic province, which is characterized by alternating layers of predominately sand and clay sediments in the Anne Arundel County, Maryland area. The inter-layered sequence of sand and clay units dip gently to the south and east from the north part of the county. Evaluation of borehole lithologic data obtained from field investigations indicates the coastal plain deposits underlying the Site comprise a complexly inter-bedded sequence of predominately coarse-grained (sand with gravel and fines) and fine-grained (silt and clay) units. A surficial layer of sandy material in the area of the former Kop-Flex buildings represents fill material emplaced during construction of the original facility. Detailed information on the subsurface geology at the Site is included in the RAP (WSP 2015a).

The aquifer at the Site is comprised of the Lower Patapsco Aquifer (LPA) of the Atlantic Coastal Plain aquifer system. The primary water-bearing zones in the LPA consist of a shallow (unconfined to semi-confined) zone and deep (confined) zone. The shallow and deep zones are separated by a leaky confining unit of variable thickness. The direction of groundwater movement in the shallow zone mimics the general surface topography and is largely influenced by local surface water features, with flow to the north and west toward Stony Run. Groundwater flow in the deep zone is to the south and east, consistent with the regional groundwater flow in the LPA in this portion of the coastal plain aquifer system. Additional details regarding the Site's hydrogeologic setting are provided in the RAP (WSP 2015a) and subsequent amendments.

1.3.2 CONTAMINANT IMPACTS

SOIL

Given that no soil sampling has been conducted following property redevelopment or is required under the Consent Order, the following summary of soil conditions is based on data from pre-2016 Site characterization activities. These historical

sampling results indicated the presence of Site-related volatile organic compounds (VOCs) and 1,4-dioxane in the unsaturated soil in the southwestern portion of the former Kop-Flex manufacturing building (Area of Concern [AOC] 1; Figure 2) and the area east of the manufacturing building (AOC 2). Based on the current Site plan, AOC 1 is situated in the northwestern portion of the south building constructed during the 2016 to early 2017 redevelopment of the property, while AOC 2 is located immediately north of the south building in the eastern part of the truck loading dock area. After the completion of remedial activities in 2013, the near-surface (<10 feet below ground surface [bgs]) soil in AOC 1 contained low residual levels of Site-related VOCs with the majority of the contaminant mass present in areas where impacted soil material could not be excavated underneath the former building. In AOC 2, the near-surface soils had non-detect to very low concentrations of 1,1,1-trichloroethane (TCA) and associated degradation compounds. Based on the historical sampling data, deep unsaturated zone soils (> 10 feet bgs) with elevated 1,1,1-TCA concentrations are locally present in the area. Given the water table depth is typically less than 13 feet bgs in this portion of the Site, the majority of the remaining VOC mass appears to be present in the upper-most portion of the saturated zone.

GROUNDWATER

Groundwater sampling results confirm the existence of Site-related contaminants in both the shallow and deep portions of the LPA beneath the former Kop-Flex property. The Site-related VOCs in groundwater consist of 1,1,1-TCA and its degradation products 1,1-dichloroethane (DCA) and 1,1-dichloroethene (DCE); and other chlorinated ethenes including cis-1,2-DCE, trichloroethene (TCE), and tetrachloroethene (PCE). Additionally, 1,4-dioxane, an additive historically used in commercial formulations of 1,1,1-TCA, is present in groundwater. In the shallow zone, the highest levels of constituents of concern (COCs) are found in the general vicinity of AOC-2 and decrease in the direction of groundwater flow. Based on the sampling data, VOC impacts in shallow groundwater extend westward to the area around monitoring wells MW-39 and MW-42 (Figure 1). The COCs detected in the deep zone of the LPA are consistent with those identified for the shallow zone. Overall, COC impacts in the deep zone extend from the northern-most portion of the Site to the southern property boundary and offsite areas to the south-southeast. Since implementing the hydraulic containment corrective measure, the highest COC concentrations in groundwater samples have been detected at monitoring wells located in the central and northern portion of the Site (MW-16D and MW-23D) and offsite well MW-24D, which is located immediately downgradient on the Williams-Scotsman property (Figure 1). However, it should be noted that higher COC concentrations are present in groundwater recovered by the deep pumping well located near the southwest corner of the Site (RW-1D) compared to the well at the southeast corner (RW-2D).

1.4 DESCRIPTION OF CORRECTIVE MEASURES

1.4.1 INSTITUTIONAL CONTROLS

The Environmental Covenant for the Site, executed on November 28, 2018, and recorded on February 22, 2019, includes the imposition of property use and groundwater use restrictions, as well as notification obligations incumbent upon the property owner. The land comprising the Site shall only be used for commercial or industrial purposes. According to Item 5.d of the Environmental Covenant, the property shall not be used for residential or recreational purposes, or for operation of day care facilities. Groundwater at the property is not to be used for any purpose, including, but not limited to, use as a potable water source, other than to conduct the maintenance, sampling, and monitoring activities required by the EPA Consent Order and RAP.

In addition to the above use restrictions, a Soil Management Plan (SMP) was developed to specify procedures for safely conducting soil excavation activities in areas where COC-containing soil material may still be present in the shallow subsurface. The SMP shall be followed during any grading or excavation work at the Site that may occur during future construction or other intrusive activities that could involve the handling and staging of soil material. If necessary, the procedures described in the SMP will be modified to take into consideration specific features of future construction work to ensure all soil disturbance activities are conducted in accordance with applicable federal and state requirements.

1.4.2 ENGINEERING CONTROLS

The engineering controls for the Site are comprised of a concrete cap in and immediately adjacent to a portion of the south building, i.e., Catalent Building 2, (area identified as AOC 1) and passive vapor venting systems installed in both buildings (Figure 2). During the redevelopment of the Site in 2016 and early 2017, the concrete slab of the former Kop-Flex building was retained within the area designated as AOC 1. This former floor slab, together with the vapor barrier and reinforced concrete floor slab for the south building and portion of the adjoining reinforced concrete loading dock in the AOC 1 area, comprise the cap for the VOC-containing soils remaining in the southwestern portion of the Site.

Horizontal perforated pipes are located at regular intervals under the floor slabs and overlain by a vapor barrier in the north and south buildings (Catalent Buildings 1 and 2). The horizontal pipes are connected to an intake pipe manifold on the loading dock side of each building, and to a vent pipe manifold on the opposite side of the building that is connected to a series of riser pipes. This system allows for the passive venting of sub-slab vapor below each building to the atmosphere via vent outlets on the building roofs.

1.4.3 HYDRAULIC CONTAINMENT SYSTEM

Pursuant to the requirements under the EPA Consent Order (Section VI.B.1.a.) and RAP, the System has been installed at the Site to control the migration of chlorinated VOCs (CVOCs) and 1,4-dioxane in groundwater. The System involves the continuous extraction and treatment of affected groundwater at the Site. Groundwater is extracted from a network of three shallow recovery wells (RW-1S through RW-3S) screened within the shallow zone of the LPA, and two deep recovery wells (RW-1D and RW-2D) screened in the deep LPA zone. The extracted groundwater is routed via underground piping to the System building. Treatment equipment is comprised of an equalization tank to regulate flow through the downstream treatment components, bag filters for suspended solids removal, synthetic resin (AMBERSORB^{TM} 560) for the removal of CVOCs and 1,4-dioxane, a metering pump for the addition of caustic soda for pH adjustment, and two parallel in-line aerators to increase dissolved oxygen levels in the water. The treated water is discharged to Stony Run, in accordance with the requirements specified in National Pollutant Discharge Elimination System (NPDES) Permit MD0069094 (corresponding to Maryland State Discharge Permit Number 15-DP-3442; the Permit) issued by the MDE. Samples of the treated effluent are collected monthly for the analysis of VOCs and other parameters (including 1,4-dioxane), in accordance with the Permit and RAP. The installation of the System was completed in February 2017, with continuous, full-scale operation beginning on March 10, 2017.

There are two synthetic resin vessels, identified as T-1100 and T-1200, which are arranged in series. They operate in a lead-lag configuration until the lead vessel reaches its adsorption capacity for the contaminants, which is based on the volume of water processed by the vessel. When the lead vessel has processed the pre-determined volume of water, the lag vessel is switched into the lead position, and the contaminant-loaded vessel is temporarily taken out of operation for regeneration. The loaded vessel is regenerated onsite using steam process equipment, including a boiler and steam superheater, to remove the adsorbed COCs from the resin. The steam containing the desorbed constituents is discharged to the atmosphere through the steam reheater. Once the regeneration process is completed, the regenerated vessel is returned to operation as the lag vessel, and the cycle is repeated. Condensate from the regeneration process combines with influent groundwater in the flow equalization (EQ) tank for treatment through the System. Softened water used to quench (cool) and rinse the resin following regeneration is also routed to the EQ tank to combine with groundwater for treatment.

1.5 RESPONSE ACTION OBJECTIVES FOR GROUNDWATER

Since impacted groundwater poses the most significant risk to potential receptors, the goals for the corrective measures are focused on the affected groundwater in the LPA. The following Response Action Objectives (RAOs) with respect to groundwater were previously developed for the Site and continue to be used to gauge the performance and effectiveness of the corrective measures (WSP 2015a):

- controlling migration of groundwater with VOCs exceeding applicable human health criteria beyond the Former Kop-Flex property boundary
- reducing concentrations of VOCs in the aquifer system

— restricting groundwater use on the Site to prevent potential exposure to VOCs present at concentrations above applicable human health criteria

1.6 GROUNDWATER CLEANUP STANDARDS

The groundwater cleanup levels for the VOCs detected in the groundwater are based on the MDE Cleanup Standards (Cleanup Standards) for Type I/II Aquifers, except as noted for 1,4-dioxane, and are listed below.

Compound	Cleanup Standard (micrograms per liter [µg/L])
1,1,1-TCA	200
1,1-DCA	2.8[2]
1,1-DCE	7
1,2-DCA	5
Chloroethane	2,100[3]
TCE	5
Cis-1,2-DCE	70
1,4-Dioxane	15[4]

[2] The standard for 1,1-DCA reflects the current numerical criterion promulgated by MDE, which was updated in October 2018.

[3] The standard for chloroethane reflects the current numerical criterion promulgated by MDE, which was updated in October 2018.

[4] The cleanup criterion for 1,4-dioxane, which is not included in the MDE Cleanup Standards, was determined from an evaluation of calculated risk-based concentrations in groundwater. Based on this evaluation, a property-specific cleanup criterion of 15 µg/L was established for 1,4-dioxane at the Site, whereas the action level for 1,4-dioxane in the offsite area is 4.6 µg/L.

2 2021 SYSTEM OPERATION AND PERFORMANCE MONITORING

2.1 SYSTEM RUNTIME AND DOWNTIME

During the reporting period from January 1 through December 31, 2021, the System operated approximately 62% of the time. Some downtime was related to the completion of routine maintenance activities, such as changing bag filters, cleaning strainers, or testing the high-sump alarm, in accordance with WSP's OM&M Manual (WSP 2018). The System experienced multiple brief (a few hours) manual shutdowns to conduct non-routine maintenance to various System components. The System also experienced a few short (a few hours to 1 day) automatic shutdowns due to malfunctioning of the pH adjustment system, requiring manual adjustment onsite by a System operator. Additional non-routine System shutdowns associated with unexpected events and System maintenance, and the scheduled resin cleaning event occurred as described below.

- From February 9 through February 12, 2021, the System was shut down to conduct a reset of the regeneration sequencing for the resin vessels. A regeneration reset is currently completed at least semi-annually to address early loading, or "pre-loading", of the lag vessel's resin due to an exceedance of resin adsorption capacity of the lead vessel, as discussed in Section 2.4.1. System flow was suspended to allow for the steam regeneration of both resin vessels to remove any Site-related VOCs and 1,4-dioxane from the media. The steam regeneration process for each vessel takes approximately 24 hours to complete and is normally done with one vessel continuing to process contaminated water.
- On June 9, 2021, the System was manually shut down after the System operator observed that the air compressor was running continually and at risk of failure. It was determined that the reason for abnormal air compressor operation was a leaking actuator for one of the automated process valves on the resin vessel skid. The System was restarted on June 21, 2021, following replacement of the damaged actuator as well as the filter/regulators for the compressed air system.
- The System automatically shut down on July 5, 2021, due to a high-high differential pressure alarm for the bag filters. The System was restarted on July 7, 2021, following replacement of the bag filters. Shortly after restarting the System, the operator-initiated regeneration on one of the resin vessels, which was immediately interrupted by a fault for a damaged actuated solenoid valve between the boiler and the steam superheater. The System was restarted on July 12, 2021, following replacement of the damaged valve. The System automatically shut down again on July 13, 2021, due to a problem with the steam superheater and remained nonoperational for over a month due to supply chain issues resulting in an unexpected long lead time for replacement parts. The System was restarted on August 27, 2021, following replacement and reconfiguration of the superheater outlet thermocouple and controller. The System automatically shut down later in the day on August 27, 2021, due to a high-high differential pressure alarm for the bag filters. The System was restarted on August 30, 2021, following replacement of the bag filters.
- From September 21 through October 6, 2021, there was an extended, scheduled System shutdown to clean the specialty resin used to treat extracted groundwater, currently scheduled annually, as described in Section 2.4.3.
- On November 8, 2021, the System was manually shut down because the measured pH of the boiler blowdown discharged to the sanitary sewer system exceeded the pH range specified in the effluent limitations in the wastewater discharge permit issued by the Anne Arundel County (County) Pre-treatment Program. The System was restarted on December 27, 2021, following temporary approval from the County.

There was a recurring problem associated with the operation of deep recovery well RW-1D starting in May 2021 that did not affect the operation of the other recovery wells or function of the System. The problem had previously occurred a few times during 2020 but had not recurred since a manual reset of the RW-1D pump variable frequency drive (VFD) on October 19, 2020. On May 15, 2021, the RW-1D submersible pump again stopped operating due to a pump VFD fault. The RW-1D pump was restarted on May 19, 2021, following a manual reset of the VFD. The RW-1D VFD fault recurred on June 30, 2021. The RW-1D pump was restarted on July 7, 2021, following another manual reset of the pump VFD. The problem recurred on August 27, 2021; the VFD was reset and the RW-1D pump restarted on August 31, 2021. This same problem recurred on September 2, 2021. After evaluating possible root causes for the continued recurrence of the VFD fault, the RW-1D pump was restarted on September 10, 2021, following a hard reset of the electrical panel on which the VFD is mounted.

When fully operational[5], the groundwater withdrawal rate for the System ranged from approximately 67 gallons per minute (GPM) to 75 GPM, with an average rate of 70 GPM during the reporting period. The design flow rate for the System was approximately 80 GPM (WSP 2015a). Based on the System effluent totalizer, approximately 22.5 million gallons of groundwater were treated and discharged to Stony Run via Outfall 001 from January 1 through December 31, 2021. Information on the groundwater extraction rates for the shallow and deep recovery wells is provided in Section 2.2.3.

2.2 OPERATIONAL AND PROCESS MONITORING DATA

2.2.1 OVERVIEW OF TREATMENT SYSTEM OPERATIONAL AND MONITORING DATA

During System operation, water samples were regularly collected for chemical analysis to monitor and evaluate VOC and 1,4-dioxane concentrations in the System influent (Table 1) and effluent (Tables 2 and 3). Total constituents of concern (COCs) concentrations (VOCs + 1,4-dioxane) for the System influent were generally consistent or slightly decreasing during the reporting period, with the highest System influent concentration (384 µg/L) detected in the sample collected during January 2021, and the lowest concentration (323 µg/L) detected in the sample collected during September 2021 (Figure 3).

Analysis of the treated water (i.e., effluent) indicated non-detect concentrations of VOCs (Table 2) and non-detect to low levels of 1,4-dioxane, with concentrations above the detection limit ranging from 1.1 µg/L to 13.0 µg/L (Table 3). In 2021, all effluent samples had 1,4-dioxane concentrations below the Site-specific cleanup goal of 15 µg/L. Samples of the treated effluent were collected for the analysis of other parameters, in addition to VOCs and 1,4-dioxane, in accordance with the Permit. The analytical results for all samples, except for an anomalous nickel exceedance measured during November 2021 (Section 2.2.2), indicate compliance with the effluent limitations specified in the Permit (Table 2).

2.2.2 TREATMENT SYSTEM MONITORING AND PERFORMANCE

SITE CONSTITUENTS OF CONCERN

The System treatment equipment performance was monitored by collecting and analyzing influent and effluent water samples from in-line sample ports located at the treatment building. The System effluent samples also fulfilled the monitoring requirements specified in the Permit. The samples were analyzed for VOCs using EPA SW-846 Test Method 8260D (for influent samples) or EPA Method 624 (for effluent samples) and 1,4-dioxane using modified EPA SW-846 Test Method 8260B with Selected Ion Monitoring (SIM). Lab analysis was conducted by the Phase Separation Science, Inc. laboratory located in Catonsville, Maryland.

The historical VOC and 1,4-dioxane results for the System influent and effluent samples are summarized in Tables 1, 2, and 3. Certified laboratory analytical reports for the January 2021 through December 2021 influent and effluent samples are included in Appendix A. Influent VOC and 1,4-dioxane results were compared to the Cleanup Standards, as stated in Section 1.6 of this document.

Based on the analytical results for the 2021 reporting period, 1,1-DCA, 1,1-DCE, and 1,4-dioxane were the only COCs detected above their respective Site-specific Cleanup Standard in the influent samples. Other CVOCs detected in the System influent, albeit not above the Cleanup Standards, included 1,1,1-TCA, 1,2-DCA, chloroethane, TCE, and *cis*-1,2-DCE. For the non-exceeding COCs, 1,1,1-TCA and chloroethane were detected at the highest concentrations in the influent samples, with the chlorinated ethenes TCE and *cis*-1,2-DCE, and 1,2-DCA present at very low concentrations (< 2 µg/L). The total VOC concentrations in the influent ranged from 236 µg/L (September 2021) to 254 µg/L (January 2021). The 1,4-dioxane concentrations in the influent ranged from 87 µg/L (September 2021) to 130 µg/L (January 2021).

[5] Fully operational includes days with minor (i.e., less than 1-hour) System shutdowns related to conducting routine System maintenance. Fully operational does not include days with System shutdowns totaling more than 1-hour. It also does not include days that RW-1D was nonoperational as the flow from this recovery well represents just under half of the total influent System flow.

Figure 3 plots the historical concentrations of total VOCs and 1,4-dioxane in the System influent from start-up (March 2017) through the end of 2021. This plot shows a generally decreasing trend for influent concentrations during the initial 6 months of operation. Influent concentrations slightly increased from late 2017 through the first half of 2018. Total VOC concentrations have gradually decreased since the fourth quarter of 2018, which is reflected by the two lowest influent concentrations for total VOCs and 1,4-dioxane being recorded during the April 2021 and September 2021 sampling events. The total VOC and 1,4-dioxane concentrations are below anticipated concentrations used for the design of the System. Based on the System supplier's modeling of measured influent concentrations, the corresponding resin loading rate should require two regenerations per week. However, the regeneration frequency was increased to three times per week in April 2019 based on increasing detections of 1,4-dioxane in the System effluent.

No VOCs were detected above the method reporting limits in the effluent samples collected during 2021. Based on these sampling results, the VOC removal efficiency during the reporting period was 100%. The 1,4-dioxane concentrations in the effluent water samples ranged from below the method reporting limit of 1.0 µg/L (seven samples) to 13.0 µg/L (January 2021). Based on the sampling results, the removal efficiency for 1,4-dioxane was approximately 98.1% during 2021, which approaches values for the initial years of System operation.[6] Based on sampling results for the previous years, removal efficiencies for 1,4-dioxane during 2017, 2018, 2019, and 2020 were calculated at 100%, 99.5%, 93.3%, and 95.8%, respectively.

During the 2021 reporting period, the System removed an estimated 45.8 pounds (lbs) of the primary CVOCs - 1,1-DCE, 1,1-DCA, and 1,1,1-TCA - and 19.7 lbs of 1,4-dioxane (Table 4). The average flow rate (in GPM) for the System effluent provided in Table 4 was determined based on fully operational days only. Figure 4 plots the historical mass removal of the primary CVOCs and 1,4-dioxane by the System from start-up (March 2017) through December 2021. As shown in this plot, cumulative mass removal of the primary COCs has exhibited a consistent increasing trend since System start-up. However, annual mass removal has consistently decreased each year from a historical high of 152.8 lbs of COCs in 2018 to 65.5 lbs in 2021 (Table 4). This reduction in contaminant removal is believed to mainly reflect a decrease in the mass in the aquifer, although lower System runtimes in 2020 and 2021 may be a contributing factor.

NOVEMBER 2021 NICKEL EXCEEDANCE

An elevated concentration of total nickel (995 µg/L) that exceeded the effluent limit of 470 µg/L was detected in the discharge sample collected on November 3, 2021. WSP provided the appropriate verbal and written notifications to MDE in accordance with the Permit. WSP reviewed the certified analytical report provided by the laboratory, including the summary of the quality control results, and did not identify any issues with the nickel analysis in the aqueous samples. In addition, a thorough assessment of the System operational data did not identify any problems that would have resulted in the total nickel exceedance. Subsequent sampling of the effluent on November 19, 2021, detected a total nickel concentration of 24.4 µg/L, which is more than an order of magnitude below the level in the early November sample and consistent with the historical data for total nickel in the treated water. Based on evaluation of the System operation and subsequent effluent sample result, the elevated nickel concentration in the early November 2021 sample is believed to have been caused by an isolated, transient "slug" of water with elevated nickel concentrations entering the System.

2.2.3 RECOVERY WELLS

GROUNDWATER PUMPING RATES

The monthly average extraction rates and total volume withdrawn for each recovery well are provided in Table 5 and Table 6, respectively. Data for each recovery well is collected weekly by the certified System operator from a flowmeter located at the wellhead. Extraction rates averaging around 30 GPM during normal System operation were set at each of the deep recovery wells to ensure capture of the southward migrating plume in the deep confined zone of the aquifer. The extraction rates at the shallow recovery wells were set at between 2 to 5 GPM; a higher extraction rate was established in RW-1S because of the higher VOC levels in the extracted groundwater at this location (Figure 5). The average combined flow rate, which is

[6] Based on the characteristics of the 1,4-dioxane breakthrough curve, the effluent concentration represents a maximum concentration for that sampling period and not the average concentration for the monitoring period. As a result, actual removal efficiency is presumed to be greater than 98.1%.

determined from the summation of the individual recovery well extraction rates (Table 5), includes data from nonoperational and partially operational days. Most of the recovery wells saw a significant decrease in average annual extraction rate during 2021 due to the multiple and sometimes prolonged shutdowns of the System as described in Section 2.1.

MASS REMOVAL AT GROUNDWATER EXTRACTION POINTS

WELL DISCHARGE SAMPLING

In accordance with the Groundwater Monitoring Plan (WSP 2015b), water samples were collected from the shallow and deep recovery wells on May 9, 2021, and December 29, 2021. The sampling data is used to assess contaminant mass recovery at the groundwater extraction points in the shallow and deep portions of the aquifer. Groundwater discharge from each recovery well was collected via sampling ports located in the well head piping. The valve for the sampling port was opened to deliver a low flow stream of water to fill the sample bottles. Initially, a small amount of water was purged from the sampling port and collected in a 5-gallon bucket. A groundwater sample was then collected for laboratory analysis of VOCs by EPA SW-846 Test Method 8260D and 1,4-dioxane using modified EPA SW-846 Test Method 8260D SIM by the Pace Analytical Services laboratory in Huntersville, North Carolina. The purge water generated from the recovery well sampling was processed through the System.

SAMPLE RESULTS

The May and December 2021 recovery well analytical results are presented in Table 7, and historical sampling data is presented in Table 8. Results for the 2021 recovery well samples are included in Figure 6. Figure 5 shows the trends in total VOC and 1,4-dioxane concentrations for each well and its average pumping rate. Based on the 2021 data, the total VOC and 1,4-dioxane concentrations have remained generally consistent in all wells although levels of CVOCs consistently decreased in the RW-3S discharge during the 2021 reporting period. As mentioned above, RW-1S discharge has the highest total VOC and 1,4-dioxane concentrations, and therefore the highest pumping rate, for the shallow recovery well network. Concentrations of VOCs and 1,4-dioxane between RW-1D and RW-2D are fairly similar, and therefore the well pumps are set at similar pumping rates.

2.3 WASTE MANAGEMENT

2.3.1 ROUTINE SYSTEM ACTIVITIES

Bag filters for the removal of suspended solids from the treatment system influent were regularly changed out with new bag filters. The frequency of bag filter replacement has been approximately weekly since the end of 2020. Spent bag filters were managed offsite as non-hazardous waste (general trash). Disposable materials from the groundwater and System sampling activities (e.g., gloves) were also managed offsite as non-hazardous waste.

2.3.2 RESIN CLEANING WASTE

The spent caustic solution containing desorbed organics from the resin cleaning (Section 2.4.3) was containerized in a double-walled frac tank and neutralized using hydrochloric acid. In addition, the high pH, organic-rich water produced during the post-cleaning regenerations of each vessel was handled in the same manner. Following characterization of the neutralized wastewater and approval from the County, the wastewater was discharged to the sanitary sewer system under EMERSUB 16's wastewater discharge permit. A copy of the Request for New Wastewater Discharge sent to the County on November 1, 2021, and the County approval is provided in Appendix B. The wastewater and solids generated from power washing of the emptied frac tank were containerized and removed by a vacuum truck for offsite disposal as non-hazardous waste.

2.4 RESIN FOULING

2.4.1 BACKGROUND

In response to increasing detections of 1,4-dioxane in the System effluent, WSP worked with the System supplier (Emerging Compounds Treatment Technologies [ECT2]) to investigate the cause and identify a solution for an apparent reduction in the treatment resin loading capacity. The investigation concluded that this reduced capacity is caused by the fouling of the resin material via the buildup on the resin sorption sites of organic constituents over time that are not completely removed during the steam regeneration process. Given this determination, WSP increased the frequency of the steam regenerations in 2019 to ensure 1,4-dioxane concentrations in the treated water remained below the Site-specific cleanup goal, while developing a plan for restoring treatment resin loading capacity.

Bench-scale testing of approaches to chemically remove the organic constituents fouling the treatment resin was completed by ECT2 in early September 2019. Based on evaluation of the test results, the selected cleaning procedure was identified as removal of the treatment resin from the vessels and "washing" the material with a heated caustic solution. The cleaned resin material would then be placed back into the vessels and the System returned to normal operation.

ECT2 retained Recirculation Technologies, LLC (RTI), a vendor specializing in the cleaning and maintenance of regenerable resins used for water treatment, to perform the onsite *ex-situ* cleaning of the resin. The resin cleaning was implemented full-scale for the first time during late February through early March 2020. Subsequent analysis of samples of the pre- and post-cleaned resin, as well as 1,4-dioxane breakthrough sampling conducted post-cleaning, indicated that the cleaning process was successful at removing adsorbed organic compounds as well as very fine sediment from the resin, increasing resin loading capacity closer to the original condition.

2.4.2 PRE-TREATMENT TECHNOLOGY EVALUATION

During the fall of 2020, WSP worked with Calgon Carbon and ECT2 to evaluate treatment technologies that could remove natural organic carbon (NOC), which was presumed to be the primary foulant present in the System influent. The initial phase of the evaluation involved the completion of bench-scale isotherm studies of two proven technologies – granular activated carbon (GAC; Calgon Carbon) and ion exchange (ECT2) – for removing the NOC constituents. The GAC isotherm study was inconclusive due to the non-detect levels of NOC indicator compounds – tannins and lignins – in the influent. Evaluation of the test results for the ion exchange isotherm study identified three resins that appeared to be successful in removing the NOC constituents. Based on these results, WSP implemented a small-scale pre-treatment pilot test using the best-performing ion exchange resin during the spring of 2021.

WSP retained ECT2 to assist with the design and set-up of an ion exchange resin test column in the treatment building at the Site. The ion exchange resin was packed into a column measuring approximately 4 inches in diameter and 40 inches in length, which was mounted vertically for the test. The influent for the test column was plumbed into the water conveyance piping just downstream of the System bag filters. The test set-up included a peristaltic pump set to maintain a flow rate of approximately 440 milliliters per minute (0.12 GPM) through a 5-micron in-line water filter and the resin column. A pressure regulator/indicator was installed just upstream of the peristaltic pump to lower the influent pressure within the range rated for the pump. The column effluent was set to drain into the building sump, where it would be pumped back to the System EQ tank. Three pressure indicators were included in the set-up to monitor the differential pressures across both the in-line filter and the resin column, and a rotameter and digital flow meter/totalizer were used to monitor the flow rate and the total volume of water processed by the column. Sample ports were included on the influent and effluent sides of the column.

The ion exchange column treatability test was initiated on April 12, 2021, and continued through May 10, 2021, which equates to a 4-week test duration. Samples of the column influent and effluent were collected three times per week (Monday, Wednesday, and Friday) during the testing period to evaluate the treatment effectiveness for the NOC constituents. All column influent and effluent samples were submitted to Eurofins Environment Testing America laboratory in Lancaster, Pennsylvania, and analyzed for low level total organic carbon (TOC) using Standard Method (SM) 5550B and tannins and lignins using SM 5310C. The column influent and effluent samples collected on Mondays were also analyzed for VOCs using EPA SW-846 Test Method 8260C and 1,4-dioxane using EPA SW-846 Test Method 8260C SIM. After completing the

treatment portion of the test, the spent ion exchange resin column was disassembled and shipped to ECT2's laboratory, in the event further testing was deemed necessary.

Table 9 provides the analytical results of the treatability test samples, and the laboratory analytical reports are included in Appendix C. The analytical results for TOC and tannins and lignins were used as indicators for NOC removal during the treatability test. Tannins and lignins were not detected in any samples collected during the testing period. TOC breakthrough occurred much earlier than anticipated, with TOC detected in the column effluent sample collected 2 days after initiating the test. The results of the column influent and effluent sampling also suggested that VOCs were being adsorbed by the ion exchange resin, which was only intended to remove the NOC constituents. Overall, the pilot test results showed that full-scale implementation of pre-treatment by ion exchange to remove the NOC constituents would not be cost effective as compared with periodic heated caustic cleaning of the resin as was performed during 2020.

2.4.3 RESIN CLEANING

WSP retained RTI during 2021 to again perform the onsite *ex-situ* cleaning of the resin. WSP also retained ECT2 to provide onsite support and oversight for the process. In preparation for the resin cleaning activities, the System was shut down on September 21, 2021, to allow for the steam regeneration of both resin vessels to remove any Site-related VOCs and 1,4-dioxane from the media.

The resin cleaning was completed over the weekend of September 24 through September 25, 2021. On September 24th, the resin was removed from the vessels and transferred to separate tanks on RTI's mobile cleaning trailer. The resin was cleaned by adding heated caustic solution to the tanks, agitating the mixture for one hour using compressed air, and then transferring the "spent" caustic solution to a double-walled frac tank for subsequent management. This process was repeated a total of four times for the resin from each vessel, after which the cleaned resin was returned to its original vessel. Subsequent analysis of samples of the pre- and post-cleaned resin suggests that the cleaning process was again successful at removing adsorbed organic compounds and sediment from the resin. Reports prepared by RTI of the *ex-situ* resin cleaning activities and results are included in Appendix C.

Between September 28th and October 5th, the cleaned resin in each vessel was regenerated twice to desorb additional organic carbon foulants and remove residual caustic from the media. The condensate and rinse water generated during these regeneration events was transferred to the double-walled frac tank because of the elevated pH and brownish color of the water, which indicated the continued removal of NOC constituents from the resin at relatively high concentrations. Following the completion of the back-to-back regenerations for each vessel, controlled operation of the System began on October 6th, 2021. Given the continued presence of residual caustic on the resin, it was determined that hydrochloric acid would need to be temporarily added to the System effluent to lower the pH within the discharge Permit limits. Manual operation of the System was conducted for approximately 8 hours on October 6th, to allow for the controlled addition of the acid to ensure compliance with the effluent limitations. Normal, automated operation of the System, with caustic addition for pH adjustment, resumed on the afternoon of October 6th, 2021.

2.5 SYSTEM MAINTENANCE

2.5.1 ROUTINE MAINTENANCE ACTIVITIES

During the 2021 reporting period, WSP subcontracted the weekly OM&M of the System to a local contractor, S&S Technologies, Inc. of Elkton, Maryland. Subcontractor oversight (onsite and remotely) was provided by WSP engineer Ms. Shannon Burke, working under the direction of Mr. Steve Kretschman, P.E., the engineer of record for the System. OM&M activities were conducted in accordance with the current version of the OM&M Manual, dated May 2018.

Routine OM&M activities performed during the reporting period included the following:

- regeneration of the resin
- replacement of bag filters
- cleaning of the resin vessel wye strainers

- cleaning of the inline pH probe
- recording instrumentation readings (flow, pressure, temperature)
- inspection of the caustic pump and tubing, and replacement of the tubing as necessary
- system-wide leak inspections
- steam boiler system inspections and testing
- system-wide manual exercising of ball valves

In conjunction with the inspection and testing of the boiler system, a local water treatment contractor (Chem-Aqua, Inc.) completed monthly checks of the boiler water chemistry. Quarterly mechanical inspections and maintenance of the steam boiler components were performed by another local contractor (Tate Engineering Systems, Inc.).

In addition to the routine tasks, annual OM&M activities were performed on July 27, 2021, and included the following:

- inspection and cleaning of well vaults and piping tee-boxes
- system-wide wye strainer inspection and cleaning
- inspection and cleaning of the building sump
- inspection of bag filter housing internals

Additionally, the EQ tank was opened and inspected on November 17, 2021. The annual inspection findings determined there were no leaks for any of the System components and cleaning of the inside of the flow equalization tank was not necessary.

2.5.2 NON-ROUTINE MAINTENANCE ACTIVITIES

RECOVERY WELL RW-1D

Following the regeneration of a resin vessel, the System automatically shuts down for a few seconds to allow for reconfiguration of the process water flow path before the cleaned vessel is brought back on-line. During 2020 and 2021, there was a recurring fault for the RW-1D pump VFD, whereby the RW-1D pump failed to restart following the completion of a regeneration. When this issue occurred, the RW-1D pump was restarted via a manual reset of the pump's VFD by an operator onsite. After the most recent occurrence of the VFD fault in early September 2021, the RW-1D pump was restarted following a hard reset of the electrical panel on which the VFD is mounted.

The problem noted above was limited to recovery well RW-1D and did not affect the operation of the shallow wells or deep well RW-2D or result in the shutdown of the System. The extraction of impacted groundwater continued to occur while repairs were affected to bring RW-1D back on-line.

COMPRESSED AIR SYSTEM

There were a few problems related to the compressed air system that powers the pneumatic actuators for the automated process valves during calendar year 2021. During June, the System operator manually shut down the System after observing that the air compressor was running nonstop and at risk of failure. The identified problem was a leaking actuator for one of the automated process valves on the resin vessel skid. The actuator was replaced, and the original actuator was shipped to the manufacturer for inspection[7]. The failure of an actuator seal is considered routine and is expected to occur with repeated use. The filter/regulators for the compressed air system were also replaced. In July, the System automatically shut down when the actuated solenoid valve between the boiler and the steam superheater failed due to a leaking seal. This valve was replaced and the original repaired by the manufacturer to be kept onsite as a spare. The air compressor was ultimately replaced in early 2022.

STEAM SUPERHEATER

During July 2021, the steam superheater began to function erratically, with indications of a problem with the outlet temperature sensor and/or controller. The system was nonoperational for over a month due to the long lead time for parts for

[7] The manufacturer replaced the seal kit, and the repaired actuator is kept onsite as a spare.

the specialty equipment. The superheater outlet thermocouple and controller were both replaced. Additional work was done on the superheater after continuing problems into early 2022, including removal of a damaged section of extension wire for the outlet thermocouple and replacement of a fuse. An onsite inspection and service visit for the steam superheater by the manufacturer (Chromalox, Inc.) is planned for the coming year.

2.6 GROUNDWATER MONITORING ACTIVITIES

A total of 21 monitoring wells have been installed to collect groundwater levels and groundwater quality samples at the Site (Figure 1). Details regarding well construction are provided in Table 10. All monitoring wells, along with the co-located piezometers for the recovery wells, were utilized in the groundwater level monitoring program. Groundwater samples were collected from select monitoring wells as part of the monitoring program for the corrective measures.

2.6.1 GROUNDWATER LEVELS

In mid-May and mid-November 2021, groundwater level measurements were collected from monitoring wells and recovery well piezometers. The depth to groundwater (to the nearest 0.01 foot) was measured from the reference point on the monitoring well or piezometer casing using an electronic water level indicator.

The collected groundwater levels (historical and for the 2021 reporting period) are provided in Table 11. Monitoring well MW-05R was inaccessible during May 2021 event, and a groundwater level measurement was not collected. In addition, a pressure transducer was deployed in recovery well piezometer RW-1D during May 2021, and the water level probe was unable to reach the water to collect a manual groundwater level measurement.

2.6.2 GROUNDWATER SAMPLES

SAMPLING PLAN

In accordance with the Groundwater Monitoring Plan (WSP 2015b), groundwater quality samples were collected from the onsite monitoring wells during the weeks of May 9, 2021, and November 14, 2021. The selected monitoring wells included 13 shallow zone monitoring wells (MW-01, MW-03, MW-04, MW-05R, MW-09, MW-16, MW-18, MW-20, MW-38R, MW-39, MW-42, MW-43, and MW-44) and 8 deep zone wells (MW-01D, MW-16D, MW-21D, MW-22D, MW-23D, MW-27D, MW-40D, and MW-41D). Monitoring well MW-05R was inaccessible during the May 2021 field sampling event, and a sample was not collected from that monitoring well.

MONITORING WELL SAMPLING PROCEDURE

Groundwater samples were collected from the monitoring wells using HydraSleeve samplers. A single, 2-foot long HydraSleeve sampler was attached to a weighted nylon line and set in each well to collect a sample in the middle of each well screen. The nylon line was secured at the well head to ensure the sampler remained at the selected deployment depth. During the sampling activities, the pre-deployed and equilibrated HydraSleeve sampler was removed from the well, and the collected water transferred to the sample containers for laboratory analysis. After sample collection, any remaining water was used to measure field parameters (pH, conductivity, turbidity, and temperature) via a multi-parameter water quality meter. Field parameter data was not obtained if there was insufficient water following sample collection. A new HydraSleeve sampler was then deployed after collecting each sample. The collected monitoring well samples were analyzed for VOCs using EPA SW-846 Test Method 8260D and 1,4-dioxane using modified EPA SW-846 Test Method 8260D SIM by the Pace Analytical Services laboratory in Huntersville, North Carolina. Excess water generated from the monitoring well sampling activities was containerized and processed through the System.

2.7 GROUNDWATER MONITORING RESULTS AND EVALUATION

2.7.1 GROUNDWATER LEVELS

Groundwater level monitoring is conducted to gather data to evaluate the hydraulic response to remedial pumping in both the shallow and deep zones of the LPA. During the reporting period, groundwater level measurements were collected in May 2021 and November 2021. Current and historical monitoring well and recovery well piezometer depth to water measurements and calculated groundwater elevations are presented in Table 11. Water level contour maps depict the water table and hydraulic head conditions in the sandy deposits in the lower portion of the shallow zone and the deep confined zone. Data from the May 2021 measurement round were used to evaluate the hydraulic response to remedial pumping in the aquifer system, and the water level contour maps are provided in Figures 7 through 9. The November 2021 groundwater measurements were collected when the System was shut down and represent groundwater levels during non-pumping conditions. The non-pumping water level contour maps are provided in Figures 10 through 12. Information on the hydraulic head distribution and gradients along the groundwater surface and lower, sand-dominated portion of the shallow zone are discussed separately below.

Monitoring well MW-03 represents the furthest downgradient (i.e., western-most) monitoring point in the shallow zone of the LPA (Figure 1). This well is screened from approximately 12 feet to 22 feet bgs in medium to coarse-grained sand sediments which correlate with the sandy deposits in the lower portion of the shallow zone that serve as the primary source of water to the shallow recovery wells. The sand deposits within the screened interval are overlain by a silt and sand layer followed by sandy fill material where the transition from unsaturated to saturated conditions occurs. The silt and sand sediments comprise part of a predominately fine-grained unit that extends to the east and west in the shallow subsurface. Under non-remedial pumping conditions, the hydraulic head in this well would be roughly equivalent to the groundwater surface that exists within the surficial sand layer. For a situation where groundwater is withdrawn from the sand unit within the lower portion of the shallow zone, the lower permeability of the silt and sand layer compared to the underlying sand deposits could influence the head response. Under this condition, the head changes associated with the groundwater extraction would propagate through the permeable sand deposits within the screened interval of the recovery wells. The presence of generally finer grained deposits overlying the sand unit screened by MW-03 would limit hydraulic communication resulting in the unit behaving more like a semi-confined water-bearing unit, as do other wells completed in the lower portion of the shallow groundwater zone of the LPA (i.e., MW-43). Thus, based on this understanding of the hydraulic conditions in this area, MW-03 groundwater elevation measurements are included in the water table contour maps when the System is not operational and in the shallow zone of the LPA contour maps when the System is operational and extracting groundwater for the sandy deposits.

MAY 2021 – PUMPING CONDITIONS

The water table contour map indicates a general northwest groundwater flow direction with a slight localized depression in the groundwater surface around well MW-38R (Figure 7). The lowering of the groundwater surface in this area is related to groundwater pumping from recovery wells RW-1S and RW-2S immediately to the east. The slight mounding effect around wells MW-04 and MW-09 most likely reflects enhanced recharge to the groundwater system associated with the small stormwater management area in the east-central portion of the Site.

The most pronounced drawdown within the shallow zone of the LPA occurred within the predominately sandy deposits in the lower portion of this zone in the vicinity of the recovery wells. In this area, a well-developed cone of depression exists near RW-2S and extends to the north toward wells MW-39 and MW-43, and south towards MW-44 (Figure 8). Based on the head variations with depth over the area, groundwater in the upper portion of the unconfined zone will tend to migrate downward through the clayey deposits in the western portion of the Site and serve as inflow to the shallow recovery wells.

The potentiometric surface contour map for the deep zone of the LPA generated from the May 2021 water level data is provided in Figure 9. The head distribution indicates the southward movement of groundwater in this portion of the aquifer, with the development of an elongated depression in the potentiometric surface along the entire southern property boundary in response to groundwater withdrawals from the deep recovery wells. The head contours indicate greater drawdown in the area around the eastern recovery well RW-2D compared to RW-1D, which is consistent with potentiometric surface maps from previous monitoring rounds. Evaluation of the head distribution indicates drawdown of the potentiometric surface extending south towards monitoring well MW-24D on the adjoining Williams Scotsman property. Additionally, comparison of the

groundwater elevations in monitoring wells MW-01D, MW-21D, and MW-41D indicate an upward component of flow from the lower-most portion of the sand deposits comprising this zone toward the depth interval screened by the recovery wells. Monitoring well MW-41D has a higher groundwater elevation and is screened in the lower-most portion of the deep zone compared to monitoring wells MW-01D and MW-21D, which are screened in the upper portion of the deep zone. This indicates an upward component of groundwater flow from the lower portion of the confined sand unit to MW-01D and MW-21D, which are located next to recovery wells RW-2D and RW-1D, respectively.

NOVEMBER 2021 – NON-PUMPING CONDITIONS

As discussed above, the System was shut down from November 8, 2021, until December 27, 2021. Thus, the groundwater water levels collected on November 14, 2021, represent groundwater levels during non-pumping conditions. The November 2021 water table contour map indicates a general northwest groundwater flow direction across the Site (Figure 10). The slight depression in the groundwater surface around wells MW-05R and MW-38R is associated with the former pumping from recovery wells RW-1S and RW-2S. The finer-grained sediments in the vicinity of these wells, together with their proximity to the groundwater extraction points, would result in the slower recovery of the groundwater levels to the non-pumping condition compared to the surrounding areas (e.g., MW-42). The slight mounding around wells MW-04 and MW-09 remains present in November 2021, although this effect is not as pronounced when compared to the conditions in May 2021.

The contour map for the shallow zone of the LPA also indicates a general northwest groundwater flow direction toward Stony Run with no localized areas of mounding or depression (Figure 11). The well-developed cone of depression near recovery well RW-2S is no longer evident from the contouring of the data. The change in groundwater elevations during November 2021 is a direct result of the cessation of System operation and recovery of the hydraulic heads to a non-pumping condition in less than one week. With the System not operating, the groundwater levels represent the head distribution in the lower portion of the shallow zone under an equilibrium, or steady state, condition.

The potentiometric surface contour map for the deep confined zone of the LPA generated from the November 2021 water level data is provided in Figure 12. The head distribution indicates the southward movement of groundwater in this portion of the aquifer. As with the lower portion of the shallow zone, the groundwater contours deviate from the May 2021 measurement event, with the elongated depression in the potentiometric surface not being present along the southern property boundary in this aquifer zone. With the System not operational, the depression is not evident in the potentiometric surface, and the hydraulic heads are returning to a non-pumping, steady state condition. The inferred southward groundwater flow direction is consistent with other potentiometric surface contour maps developed from water level data collected before the start of remedial pumping.

2.7.2 GROUNDWATER QUALITY

OVERVIEW

Groundwater sample collection from the monitoring wells is conducted to monitor the VOC and 1,4-dioxane concentrations in the LPA underlying the Site. The May and November 2021 monitoring well analytical results are presented in Table 12. The certified laboratory analytical reports for the monitoring well samples are included in Appendix D.

As described in Section 2.1, the System was manually shut down on November 8, 2021. Thus, the monitoring well samples collected on November 14, 2021, are representative of the groundwater quality a short time after the cessation of remedial pumping in the aquifer system.

Concentrations for the primary COCs detected in samples from the shallow and deep monitoring wells are provided in Figures 13 and 14, respectively. Iso-concentration maps for select CVOCs (1,1-DCA and 1,1-DCE) and 1,4-dioxane were prepared from the analytical data from the May 2021 (pumping conditions) and November 2021 (non-pumping) monitoring events. The May 2021 iso-concentration maps for 1,4-dioxane are provided in Figure 15 (shallow zone of the LPA) and Figure 16 (deep zone of the LPA). For this evaluation, the 1,4-dioxane plume was used to assess the horizontal plume extent due to its higher mobility, and thus greater inferred distribution, of this recalcitrant compound compared to 1,1-DCA and 1,1-DCE. The November 2021 iso-concentration maps are presented in Figures 17 through 19 (shallow zone of the LPA) for 1,1-DCE, 1,1-DCA, and 1,4-dioxane and Figures 20 and 21 (deep zone of the LPA) for 1,1-DCE and 1,4-dioxane. With the exception of 1,4-dioxane, the lowest concentration contour values were based on the Groundwater Cleanup Standards specified in Section 1.6. For 1,4-dioxane, the minimum contoured concentration corresponds to the MDE risk-based action

level of 4.6 µg/L. The inferred contour for the Site-specific Groundwater Cleanup Standard of 15 µg/L for 1,4-dioxane is also shown to provide an indication of the plume area with respect to this criterion. Other notes concerning the preparation of the iso-concentration maps are mentioned below.

- Shallow zone iso-concentration maps were developed using data from monitoring well samples collected at depths of less than 45 feet in the predominately sandy deposits because this is the primary interval for contaminant transport in this portion of the aquifer. Based on the well construction information, data from monitoring well MW-20 in the eastern part of the Site and wells MW-18 and MW-39 in the west were not included in the shallow zone maps.
- Analytical data from the recovery well samples was not directly used to generate the iso-concentration contours. However, these results were used to check and, if deemed appropriate, adjust the contour lines based on the zone of inflow for each recovery well.

MAY 2021 – PUMPING CONDITIONS

SHALLOW ZONE OF LOWER PATAPSCO AQUIFER

As described in Section 2.7.1, groundwater flows in a generally northwestward direction in the shallow zone of the LPA beneath the Site. For this portion of the aquifer, the highest concentrations of CVOCs (MW-16 and MW-20) and 1,4-dioxane (MW-20) were detected hydraulically upgradient of the shallow recovery wells in portions of the shallow aquifer with abundant silt and clay sediments (Figure 13 and Figure 15)[8]. Additional exceedances of the Groundwater Cleanup Standards were found in eastern (upgradient) monitoring wells MW-04 and MW-09 (1,1-DCA, 1,1-DCE, and 1,4-dioxane). Data for the western (downgradient) monitoring wells indicates Site-related contaminants at levels above the numerical criteria in samples from only two wells: MW-38R (1,1-DCA and 1,4-dioxane) and MW-43 (1,1-DCE and 1,4-dioxane).

The CVOC and 1,4-dioxane concentrations in the groundwater samples collected during May 2021 from the shallow zone monitoring wells were generally similar to levels detected in the 2020 samples (Table 13). The only exceptions include a significant increase in concentrations in the MW-04 sample and a significant decrease in concentrations in the MW-16 sample. Changes in the CVOC (1,1-DCA and 1,1-DCE) and 1,4-dioxane concentrations in the samples from MW-04 and MW-16 appear to reflect inherent fluctuations in the water quality in the eastern portion of the Site.

DEEP CONFINED ZONE OF LOWER PATAPSCO AQUIFER

Groundwater entering the deep zone of the LPA onsite flows in a southward direction across the Site and continues to move through this LPA flow zone due to the downward vertical gradients within the aquifer system and very low seepage of groundwater through the underlying Arundel Clay (see Section 2.7.1). Monitoring wells MW-16D and MW-23D, located upgradient of the deep recovery wells, had the highest CVOC and 1,4-dioxane concentrations above the Cleanup Standards (Figures 14 and 16). However, it should be noted that the sample collected from MW-24D on the adjoining Williams Scotsman property had noticeably higher concentrations of these constituents than those detected in any of the onsite wells[9]. Groundwater samples collected from the wells located near the lateral plume boundaries in the southeastern (MW-22D) and southwestern (MW-40D) portions of the Site did not have any contaminants exceeding the Groundwater Cleanup Standards. The sample from MW-41D, which is screened in the lowermost portion of the deep zone, had no detections of CVOCs or 1,4-dioxane. Since this monitoring well is the deepest well in this aquifer onsite, the sample data helps define the lower boundary of the VOC plumes on the Site.

For the deep monitoring well samples, the CVOC and 1,4-dioxane concentrations for the 2021 samples are generally similar to levels detected in the 2020 samples (Table 13). The only exceptions were decreases of concentrations below the groundwater quality standards in wells MW-01D, MW-21D and MW-22D, which are located in proximity to the deep recovery wells.

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[8] The MW-16 data was used when developing the iso-concentration contours because the sample was collected from a depth (approximately 45 feet) which is within the zone of primary contaminant transport in the shallow zone of the LPA. The MW-20 data was not utilized during contouring because of the depth of approximately 55 feet, which is below the zone of primary contaminant transport. The MW-20 sample depth also corresponds to a point less than 10 feet above the upper contact of the aquitard separating the shallow and deep zones.

[9] The results from offsite well MW-24D are described in more detail in the 2021 Offsite Groundwater Monitoring Report submitted on September 22, 2022.

NOVEMBER 2021 – NON-PUMPING CONDITIONS

SHALLOW ZONE OF LOWER PATAPSCO AQUIFER

The November 2021 CVOC and 1,4-dioxane concentrations in the groundwater samples from the shallow zone monitoring wells are similar to levels detected in the May 2021 samples. The only exceptions were for monitoring wells MW-4, MW-16, and MW-20 located in the eastern, hydraulically upgradient portion of the Site, and well MW-44 south of the recovery wells (Figure 13; Table 13). Changes in the CVOC (1,1-DCA and 1,1-DCE) and 1,4-dioxane concentrations in the samples from these wells appear to reflect inherent fluctuations in the water quality in the eastern portion of the Site or a response to the cessation of groundwater pumping due to the shutdown of the System. The groundwater sample from well MW-44 had increases in 1,1-DCA and 1,1-DCE concentrations to levels slightly above the Groundwater Cleanup Standards.

Figures 17 through 19 provide the November 2021 iso-concentration maps for 1,1-DCA, 1,1-DCE, and 1,4-dioxane in the shallow zone of the LPA. The iso-concentration maps show groundwater concentrations above the Groundwater Cleanup Standards for 1,1-DCE and 1,1-DCA with the highest concentrations in the area north of the eastern portion of the south building (around monitoring well MW-16), which corresponds to the general location of AOC 2. The highest 1,4-dioxane concentrations above the Groundwater Cleanup Standard are found on the easternmost portion of the Site (around monitoring well MW-04). Based on these results, the extent of the COC-affected groundwater shortly after the cessation of remedial pumping is defined by the sample results below their respective Site-specific numerical criteria at offsite well MW-45 to the east, well MW-01 to the south, and well MW-03 to the west. The northern extent of the impacted groundwater underneath the north building is less well defined because of a lack of monitoring points in this portion of the Site.

DEEP CONFINED ZONE OF LOWER PATAPSCO AQUIFER

For the deep monitoring well samples, the CVOC and 1,4-dioxane concentrations for the November 2021 samples are generally similar to levels detected in the May 2021 samples (Figure 14; Table 13). The only exceptions were increases in the CVOC (1,1-DCA and 1,1-DCE) and 1,4-dioxane concentrations in the samples from wells MW-01D and MW-21D, and a decrease in levels in the MW-16D sample. The increased COC concentrations in the MW-01D and MW-21D samples is not surprising due to the locations of these wells in close proximity to the deep groundwater recovery wells (RW-1D and RW-2D). Under pumping conditions, the hydrogeochemistry of groundwater moving in and out of the monitoring well screen would be largely controlled by constituents moving through the primary flow pathways within the aquifer material. The concentrations of dissolved constituents in these primary flow pathways would be in disequilibrium with constituents adsorbed to interbedded fine-grained sediments or trapped in low flow pockets. The reduction in the groundwater flow velocities around the recovery wells following the cessation of pumping would allow for the partitioning of this adsorbed and trapped contaminant mass into the natural *(i.e.*, non-pumping) groundwater seepage which could eventually be 'captured' during sample collection. The concentration changes detected in these samples did result in 1,1-DCE exceeding the Groundwater Cleanup Standard at the MW-21D location, along with 1,1-DCA and 1,4-dioxane being above their respective cleanup standards at the MW-01D location. The continued presence of constituent concentrations at or below the applicable cleanup levels at the MW-22D and MW-40D locations indicates no apparent expansion in the width of the contaminant plumes in the deep confined zone of the LPA shortly after the cessation of remedial pumping from the deep recovery wells (Figures 20 and 21).

3 FIVE-YEAR ASSESSMENT OF CORRECTIVE MEASURES IMPLEMENTATION

3.1 INTRODUCTION

The purpose of a 5-year review is to evaluate the implementation and performance of a remedy to determine if the remedy is or will be protective of human health and the environment. The 5-year review provided a technical assessment to ensure the corrective measures are functioning as intended, the cleanup levels and RAOs at the time of the remedy evaluation are still valid and determine if any new information could call into question the protectiveness of the selected remedy. The review evaluated the overall performance of the remedy to identify potential changes that could reduce operational costs and enhance the effectiveness of the remedial measures. In addition, the review evaluated both the near-term (i.e., 2021 year), and long-term (i.e., 2017 through 2021) components of the corrective measures. The 5-year review was developed using EPA's Comprehensive Five-Year Review Guidance (Office of Solid Waste and Emergency Response [OSWER] Directive 9355.7-03B-P, July 2001).

3.2 TECHNICAL ASSESSMENT

The Consent Order presented the selected remedy for the Site, which included the installation of a groundwater extraction and treatment system to pump and treat impacted groundwater onsite and the implementation of building engineering controls to protect the health of building occupants as specified in the 2015 RAP. The extracted groundwater is piped to the treatment equipment, which is contained within a dedicated building onsite. After treatment, the water is piped to a stormwater discharge manhole where it is routed via a concrete culvert to the nearby stream (Stony Run). Periodic groundwater monitoring is conducted to determine the effectiveness of the groundwater remedy.

The groundwater cleanup levels for Site COCs reflect the current standards promulgated by MDE, which were updated in October 2018. The numerical values for 1,1-DCA and chloroethane (2.8 µg/L and 2,100 µg/L, respectively) differ from the original cleanup standards established in the 2015 RAP (90 µg/L and 3.6 µg/L, respectively). The lower cleanup standard for 1,1-DCA, which decreased by one order of magnitude, will have no impact on the effectiveness of the System or its ability to achieve the RAOs. Historical influent concentrations of chloroethane have been consistently low (1.7 µg/L to 10 µg/L); thus, the increase in the cleanup standard for this compound, a secondary Site COC, should also have no effect on the System performance. Based on evaluation of the monitoring data during the five years of remedial pumping, the System is capable of preventing the offsite migration of Site CVOCs at concentrations above their respective groundwater cleanup levels and continuing to treat the CVOCs present in the extracted water with 100% efficiency.

Despite various above- and sub-grade improvements to the Site during the past 5 years, there were no changes to the property or building conditions that would compromise the integrity or functioning of the System or building engineering controls. Catalent plans to make additional modifications to the property for future business operations, including the construction of additional structures on the property (e.g., parking garage). The integrity and functioning of the engineering controls and System will continue to be protected during future Site construction activities.

3.3 ENGINEERING CONTROLS

As specified in the Use Restriction Implementation Plan (URIP) for the Site, which is pending EPA approval, an inspection of the engineering controls has been completed each Fall by WSP, with the observations and evaluation for each inspection provided in a letter report to the EPA and MDE. During each inspection, WSP visually inspected the integrity of the concrete floor slab in both buildings. Particular attention was paid to the western portion of the south building, the adjoining loading

dock concrete slab, and surrounding asphalt pavement in this area of the Site, as these portions of the slab overly the residual soil contamination in AOC 1. WSP also inspected the air intakes installed in the outside walls of each loading dock, the exposed sections of riser piping located adjacent to the interior building walls, and the vent outlets on the building roofs. Additionally, WSP reviewed documentation of any repairs made to the engineering controls because of construction activities inside the buildings.

Annual inspections of the engineering controls indicate that they continue to function as intended. During the 2018 inspection, the only recommendations were to address gaps in the expansion joint caulk in both buildings and exposed saw-cuts and cracks in the floor slab of the north building (under construction at the time) by filling with caulk. A recommendation was also made to repair a sinkhole in the asphalt around the storm sewer catch basin located between the north and south buildings (Catalent Buildings 1 and 2) and outside AOC 1. During the 2019 and 2020 inspections, the only recommendation was the removal of visible accumulated debris from some of the air intakes to ensure optimal functioning of the passive vapor venting systems.

The most recent annual inspection was conducted on November 19, 2021, with a follow-up inspection on March 15, 2022. Based on the conditions observed during the March 2022 follow-up inspection, the engineering controls at the Site appear in good condition, with no identified material concerns in the apparent operation of the AOC 1 concrete cap or the sub-slab venting systems. The only recommendation from the most recent (March 2022) inspection is the continued maintenance of the air intakes for the passive vapor venting systems to remove debris as it accumulates and promote optimal function.

3.4 HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM PERFORMANCE

3.4.1 SYSTEM OPERATION

Full-scale, continuous operation of the System was initiated on March 10, 2017, and the 5-year review period extends to December 31, 2021. During this reporting period, a total of approximately 143.8 million gallons of groundwater was extracted and treated by the System. Based on the influent total VOC and 1,4-dioxane concentrations and the volume of recovered groundwater, an estimated total of approximately 407 lbs of Site-related VOCs and 172 lbs of 1,4-dioxane have been removed since System startup through the end of the 5-year review period (Figure 4 and Table 4). Figure 22 shows the estimated mass removal by month for each month during the 5-year review period.

Approximately 45.8 lbs of Site-related VOCs and 19.7 lbs of 1,4-dioxane were recovered from the aquifer during the 2021 calendar year (Table 4). The mass removal totals in 2021 were below the historical averages for both VOCs and 1,4-dioxane (90.3 lbs and 38.1 lbs, respectively), calculated as the average from startup (2017) through 2020 (Table 4). The decreased mass removal during 2021 is partially due to decreased mass in the aquifer but can also be attributed to a significantly decreased System runtime. The normalized removal rate (i.e., mass removal extrapolated to continuous runtime) of VOCs and 1,4-dioxane in 2021 (73.9 lbs and 31.8 lbs, respectively), supports the conclusion of decreased mass in the aquifer. System runtime during 2021 was approximately 62% compared to 92%, 94%, 91%, and 77% during 2017, 2018, 2019, and 2020, respectively.

As described in Section 2.1, the reduced runtime for the System during 2021 was mainly due to a few extended shutdowns, both planned and unanticipated. As in 2020, there was an extended, planned shutdown to perform onsite *ex-situ* cleaning of the resin to maintain System treatment capacity. There were also several minor shutdowns during 2020 and 2021 related to the failure and replacement of aging equipment and instruments. The most significant shutdown during 2021 was related to the evaluation of elevated pH of the boiler blowdown water that discharges to the sanitary sewer under the wastewater discharge permit. Modifications have been made to the System itself and to operation and maintenance of the System to prevent extended downtime in the future. For example, multiple modifications have been made to the pH adjustment system (reconfiguration of the pH probe setup, upgrade of the caustic pump, secondary containment of the caustic line, etc.) and spare parts of several different components of the pH adjustment system are kept onsite to prevent future downtime related to the pH adjustment system. Spare parts for several other System components are also kept onsite and WSP continues to identify useful spare parts to prevent future System downtime.

All System effluent samples collected in accordance with the NPDES Permit during the 5-year period were non-detect for VOCs, except for a single event in June 2019. The System has consistently performed at 100% removal efficiency for VOCs, in compliance with the VOC discharge limit specified in the Permit. The effluent sample collected on June 12, 2019, contained a very low concentration of 1,1,1-TCA at 3.4 µg/L (Table 2). This sample was also one of only two samples during the 5-year period that contained 1,4-dioxane at concentrations above the Site-specific cleanup level (15 µg/L) with a concentration of 37 µg/L. As detailed in the 2019 OM&M Report (WSP 2020), the June 2019 VOC detection and 1,4-dioxane exceedance was caused by an interruption to the steam regeneration of one of the System resin vessels. Prolonged operation of the System with only one resin vessel in service resulted in the elevated concentrations of COCs in the effluent sample. Based on this incident, changes were made to the System's programmable controls to automatically shut down System forward flow in the event of an interruption to regeneration that would result in prolonged operation with only one resin vessel in service.

Exceedance of the 1,4-dioxane Site-specific cleanup level also recurred during the November 2020 sampling event, with a concentration of 43 µg/L in the System effluent sample collected on November 12, 2020. As detailed in the 2020 OM&M Report (WSP 2021), a thorough assessment of the System operational data did not identify any operational issues that would have resulted in reduced 1,4-dioxane removal efficiency at the time of the November sampling event. Subsequent System effluent samples collected during December 2020 had 1,4-dioxane concentrations of 2.0 µg/L and 2.2 µg/L, an order of magnitude below the level in the November sample and in line with levels observed during normal operation. Based on evaluation of the System operation and subsequent effluent sample results, the elevated 1,4-dioxane concentration in the November 2020 sample was determined to represent a short-term anomaly that was probably caused by a brief "slug" of water with relatively high contaminant concentrations entering the System and exceeding the resin adsorption rate. To minimize the potential for recurrence of this incident, a regeneration reset is completed at least semi-annually. As described in Section 2.1, a regeneration reset involves shutting down the System and regenerating both resin vessels prior to System restart. The steam regeneration process for each vessel, which takes approximately 24 hours, is normally completed with the other vessel continuing to process contaminated water. "Resetting" the System by removing all COCs from the media in both vessels addresses pre-loading of the lag vessel's resin and returns the System to the most optimal treatment capacity.

During the 5-year review period there were two isolated NPDES Permit exceedances, each due to elevated metals concentrations in the System effluent. The sample collected on March 20, 2017, had total zinc at 179 µg/L, exceeding the Permit limit of 120 µg/L. As discussed in the initial CMI Report (WSP 2017), the cause of this exceedance was not identified. In the absence of any other identified cause, this exceedance is believed to be due to a short-term "slug" of water with elevated zinc concentrations entering the System. Similarly, the sample collected on November 3, 2021, had total nickel at 995 µg/L, exceeding the Permit limit of 470 µg/L. As discussed in Section 2.2.2, the cause of the nickel exceedance was similarly believed to have been caused by a transient "slug" of water with elevated nickel concentrations entering the System. The analytical results for all other parameters analyzed in accordance with the Permit have been compliant with the Permit limits since System startup.

3.4.2 CONTAMINANT CONCENTRATIONS IN EXTRACTED GROUNDWATER

Concentration versus time plots from System startup (2017) through November 2021 for each recovery well are provided in Figure 5. Generally, the trend graphs demonstrate that total VOC and 1,4-dioxane concentrations increased following System startup, as expected in response to pumping operations, and have since decreased or remained relatively constant.

Mann-Kendall statistical evaluations were conducted on the historical (2016 through 2021) recovery well sampling results and monitoring well sampling results (see Section 3.6.1) for 1,1-DCA, 1,1-DCE, and 1,4-dioxane concentrations. The Mann-Kendall trend analysis for applicable wells[10] was based on the *GSI Mann-Kendall Toolkit for Consistent Trend Analysis*, which is a spreadsheet system for analyzing time-series groundwater monitoring data to quantitatively determine if the measured concentrations of a chemical are increasing, decreasing, or stable over time. The analysis relies on the following three statistical metrics (GSI Environmental Inc. 2012).

— "S" Statistic, which indicates whether the concentration trend versus time is generally decreasing (i.e., negative "S" value) or increasing (positive "S" value).

[10] The applicable wells are those 19 wells where 1,1-DCA, 1-1-DCE, and/or 1,4-dioxane were detected in at least 50% of the samples collected from these wells.

- Confidence Factor (CF), which modifies the "S" Statistic calculation to indicate the degree of confidence in the trend result, as in "Decreasing" versus "Probably Decreasing" or "Increasing" versus "Probably Increasing." In addition, if the CF is low (i.e., less than 90%) due to either considerable variability in concentrations versus time or little change in concentrations versus time, the CF is used to apply a preliminary "No Trend" classification, pending the Coefficient of Variation.
- Coefficient of Variation (COV), which is used to distinguish between a "No Trend" result (significant scatter in concentration trend versus time) and a "Stable" result (limited variability in concentration versus time) for datasets with no significant increasing or decreasing trend (e.g., less than 90% CF).

By using these three metrics, the concentration trend at each sample location can be matched to one of six trend categories - increasing, decreasing, probably increasing, probably decreasing, stable, or no trend – which are defined below.

S Statistic	**Confidence in Trend**	**Trend**
S > 0	CF > 95%	Increasing
S > 0	90% ≤ CF ≤ 95%	Probably Increasing
S > 0	CF < 90%	No Trend
S ≤ 0	CF < 90% and COV ≥ 1	No Trend
S ≤ 0	CF < 90% and COV < 1	Stable
S < 0	90% ≤ CF ≤ 95%	Probably Decreasing
S < 0	CF > 95%	Decreasing

The 1,1-DCA, 1,1-DCE, and 1,4-dioxane concentrations detected in the wells that were used in the Mann Kendall analysis are provided in Table 14. These constituents were selected for statistical analysis because there were exceedances of the Site-specific Groundwater Cleanup Standards in groundwater samples collected from the recovery and monitoring wells. The following assumptions were made for the trend analysis:

- 1,1-DCA, 1,1-DCE, and 1,4-dioxane from sampling events that occurred from 2016 through 2021 were used in the dataset for the 19 wells.
- If a duplicate sample was collected for a sampling event, the higher concentration of the primary and duplicate samples was used in the dataset.
- For samples with non-detect results, a common value was assumed for a given compound that was either lower or equal to the lowest concentration detected in the dataset (U.S. Environmental Protection Agency 2009). The value assumed for non-detect results was the method detection limit for the sample with the lowest detected concentration of a given compound.
- According to GSI Environmental Inc. (2012), "For wells in which all or a large majority of the results are non-detect for a chemical, the true concentration trend for this chemical is considered stable at a concentration below the detection limit. In this case, the Mann-Kendall analysis will not be very informative of the true concentration trend, as the method will simply indicate the trend of the non-detect values vs. time." Therefore, for this analysis, a Mann-Kendall statistic was not calculated if more than 50% of the samples had non-detect concentrations of a specific compound in a well (Interstate Technology & Regulatory Council 2013).

Most shallow recovery wells exhibited decreasing trends with regards to the primary COCs. The exception is recovery well RW-3S. Even though RW-3S discharge has the lowest VOC concentrations of the shallow recovery wells, the well exhibited increasing trends for all constituents. The increasing trends in the well discharge are believed to be the result of pumping-induced transport of residual dissolved constituents present in the heterogeneous sequence of fine and coarse-grained deposits in this portion of the shallow zone at the Site. RW-3S concentrations will be evaluated with respect to the historical data

during 2022 to determine if the increasing trends continue or if the concentration increases in 2019 and 2020 were a transient condition. Deep recovery well RW-1D exhibited no trend for 1,1-DCE; however, the well exhibited an increasing trend for 1,1-DCA and a probably increasing trend for 1,4-dioxane. In contrast, deep well RW-2D had decreasing trends for all constituents. The trends in groundwater extracted from the individual shallow and deep recovery wells support the conclusion of an overall decrease in mass in the aquifer system observed during System operation.

3.5 PLUME CAPTURE ASSESSMENT

The plumes of CVOC and 1,4-dioxane-containing groundwater that developed at the Site can be defined by both their horizontal and vertical extent. Thus, an evaluation of the plume capture needs to consider whether the head changes caused by remedial pumping have been sufficient to contain both the lateral and vertical migration of the contaminants. The following discussion reviews the water level data gathered during System operation to assess the capture of the VOC-impacted groundwater within the aquifer system. The 1,4-dioxane iso-concentration maps from May 2021 were compared to the System inflow/capture area (Figures 15 and 16). The comparison was limited to the May 2021 data due to the System not being operational during the November 2021 monitoring event.

In the shallow portion of the LPA, groundwater flow is towards the west and northwest due to topographic and surface hydrologic influences. The System remedial pumping reduces the hydraulic head in the area around the recovery wells, with the largest decline in the vicinity of well RW-2S (Figure 15). As shown by the piezometric surface, the zone of influence from the remedial pumping extends past the northern and western edges of the plume and slightly past the southern portion of the plume. Thus, the remedial pumping is sufficient to laterally contain those portions of the plume. Based on the inferred flow paths, the areal extent of the System inflow/capture area appears to extend to the plume in the eastern portion of the Site as groundwater flow is generally to the west. Vertically, the System inflow/capture area should encompass the entire shallow portion of the LPA based on the depths of the shallow recovery wells. The shallow recovery wells fully penetrate the shallow zone, extending to the top of the aquitard (confining unit) that separates the shallow and deep zones of the LPA. The recovery wells are screened over the majority of the saturated thickness. During remedial pumping, the lower hydraulic conductivity of the sandy unit above the aquitard allows groundwater to flow to each shallow recovery well screen.

Drawdown from remedial pumping at both deep recovery wells in the southern portion of the Site reduces the hydraulic head, particularly near recovery well RW-2D (Figure 16). The zone of influence from the remedial pumping extends westward towards recovery well RW-1D. The width of the northern (upgradient) portion of the plume appears to be slightly greater than the area of the deep recovery well locations along the southern Site boundary. The head changes caused by remedial pumping appear to be sufficient to prevent the lateral migration of dissolved contaminants offsite to the south. This is confirmed by the presence of COC concentrations at or below the applicable cleanup levels at wells MW-22D and MW-40D. These results indicate that the System inflow/capture area encompasses the entirety of the plume on the property.

Monitoring well MW-41D is in the southern portion of the Site and is the deepest well in the deep confined zone of the LPA. Contaminant concentrations at this monitoring well vertically define the lower boundary of the contaminant plumes onsite. During 2021, the samples from MW-41D had no detections of CVOCs or 1,4-dioxane. The fact that 2021 data are consistent with previous sampling results indicates the plume is not continuing to spread vertically to the lower portion of the deep zone, which is below the screened interval of the recovery wells. Additionally, comparison of the groundwater elevations in monitoring wells MW-01D, MW-21D, and MW-41D indicate an upward component of flow from the lower-most portion of the sand deposits comprising this zone toward the depth interval screened by the recovery wells (as discussed in Section 2.7.1). The upward component of groundwater flow from the lower portion of the confined sand unit (near MW-41D) to MW-01D and MW-21D, which are located next to recovery wells RW-2D and RW-1D, indicate the plume is vertically contained by remedial pumping within the deep zone.

3.6 EVALUATION OF GROUNDWATER QUALITY AND PLUME STABILITY

The groundwater quality results obtained from 2017 through 2021 demonstrate that the concentrations of Site-derived VOCs have generally decreased, and the System is containing the onsite portions of the plumes for the primary COCs in the groundwater system - 1,1-DCE, 1,1-DCA and 1,4-dioxane. These conclusions are based on the calculated Mann-Kendall

trends at groundwater monitoring points over the 5-year operational period of the System and the observed stability in the horizontal and vertical extent of the contaminant plumes. The following sections provide additional details regarding the trend evaluation and changes in the plume areas.

3.6.1 1,1-DCA, 1,1-DCE, AND 1,4-DIOXANE CONCENTRATION TRENDS

A Mann-Kendall analysis was conducted to determine the presence of trends in the 1,1-DCA, 1,1-DCE, and 1,4-dioxane concentrations detected in groundwater samples from applicable monitoring wells from 2016 through 2021. The Mann-Kendall analysis is a non-parametric (rank-based) procedure that tests for simple monotonic (i.e., single direction – increasing or decreasing) trends. Additional information regarding the Mann-Kendall test method is provided in Section 3.4.2 above.

The results of the Mann-Kendall trend analysis are summarized in Table 14. For the monitoring wells in the shallow zone of the LPA, 3 out of 9 wells applicable for testing exhibited a stable, probably decreasing, or decreasing trend for 1,1-DCA, 1,1-DCE and/or 1,4-dioxane. Monitoring wells MW-09 and MW-16 in the eastern portion of the Site, and MW-43, which is located north of the recovery wells, exhibited probably decreasing or decreasing trends for one or more of these COCs. Monitoring wells MW-20, which is screened in the lower portion of the shallow zone in the eastern (upgradient) portion of the Site, and MW-42 near the western property boundary, were the only monitoring wells that indicated increasing trends for one or more of the selected constituents. Even though the analysis indicated an increasing trend for 1,4-dioxane at well MW-42, the concentrations appear to have stabilized at a level below the Site-specific cleanup level of 15 µg/L (Table 13). The remaining shallow monitoring wells exhibit either a stable or no trend or did not meet the requirements to perform a Mann-Kendall statistical evaluation.

For the monitoring wells in the deep zone of the LPA, 5 out of 8 monitoring wells exhibited probably decreasing or decreasing trend for 1,1-DCA, 1,1-DCE and/or 1,4-dioxane. These wells are located both in the southern portion of the Site (e.g., MW-16D and MW-22D), which is within the area of pumping influence for the deep recovery wells, and in the northern-most portion of the property (MW-23D). The remaining deep monitoring wells did not meet the requirements to perform a Mann-Kendall statistical evaluation. There were no wells for which the sampling data exhibited an increasing trend for these selected constituents.

3.6.2 REVIEW OF EXTENT AND CONCENTRATION DISTRIBUTION OF 1,1-DCE AND 1,4-DIOXANE PLUMES

A comparison of 1,1-DCE plume maps from December 2016 (pre-installation of the System) to November 2021 are provided in Figure 23 for the shallow zone of the LPA and Figure 24 for the deep zone.1,1-DCA and 1,4-dioxane concentrations exhibited similar trends to the 1,1-DCE concentrations and are discussed in the following sections.

SHALLOW ZONE OF LOWER PATAPSCO AQUIFER

The 1,1-DCE plume has shown a slight increase (8.6%) in area from an estimated 10.4-acres (2016) to 11.3-acres (2021) in the shallow zone of the LPA over the 5-year period the System has been operating (Figure 23). The plume width slightly decreased near the downgradient portion (western edge) of the Site in the vicinity of monitoring wells MW-03 and MW-43. However, the plume has appeared to increase near the southwest portion of the south building near monitoring well MW-44. The discerned changes in the 1,1-DCE plume have resulted from the pumping of the shallow recovery wells. Based on the borehole lithologic logs, the hydrostratigraphy in this area of the Site consists of inter-layered sand, clayey sand and silty clay sediments. The finer grained deposits in the upper portion of the shallow zone are likely to have stored contaminant mass that was derived from historical solvent releases in AOC-1. During remedial pumping, the changes in the hydraulic head conditions and associated groundwater flow paths could have allowed for the mobilization and redistribution of this stored contaminant mass from the clayey deposits to the intercalated sandy layers. Concentrations of 1,1-DCE, 1,1-DCA, and 1,4-dioxane were non-detect prior to System startup; however, since the commencement of remedial pumping, concentrations of these contaminants have fluctuated, with concentrations above and below the applicable Groundwater Cleanup Standards. The 2021 plume extent is constrained by non-detect 1,1-DCE concentrations in wells MW-03, MW-38R, and MW-39 to the west; offsite well MW-45 to the east; and MW-01 to the south. The presence of constituent concentrations at or below the applicable cleanup levels at these well locations indicate no apparent expansion in the width of the contaminant plumes in the shallow zone one week after the cessation of groundwater pumping from the shallow recovery wells in the western part of the

Site (Figures 17-19, and 23).

Groundwater in the shallow zone of the LPA flows in a northwestward direction in the onsite area. Since the start-up of the hydraulic containment system in March 2017, the concentrations of 1,1-DCA, 1,1-DCE, and 1,4-dioxane indicate that the shallow recovery wells are capturing the contaminant plume within the shallow zone of the LPA downgradient of the source areas. The effective containment of the plume is also indicated by the hydraulic influence in the western portion of the Site and groundwater quality results at or below the Site-specific Cleanup Standards in the downgradient wells. Overall, the groundwater beneath the south building still contains 1,1-DCE, 1,1-DCA, and 1,4-dioxane concentrations above their respective numerical criteria, although the concentrations have decreased for these constituents since the initiation of remedial pumping. The following changes in COC concentrations at monitoring well MW-16 indicate this trend in the groundwater quality:

- 1,1-DCE - decrease from 26,200 µg/L (December 2016) to 1,630 µg/L (November 2021);
- 1,1-DCA - decrease from 6,420 µg/L (December 2016) to 1,350 µg/L (November 2021); and
- 1,4-dioxane - decrease from 1,450 µg/L (December 2016) to 76 µg/L (November 2021).

The exceptions include monitoring wells MW-20 and MW-42, where concentrations have increased for certain COCs since the initiation of remedial pumping. The increase of 1,4-dioxane concentrations at well MW-42 is most likely related to facilitated transport of dissolved mass in response to pumping from the recovery wells. The increase at MW-20 is most likely related to the enhanced recharge to the groundwater system associated with the small stormwater management area; the additional groundwater recharge could potentially be flushing VOCs from lower hydraulic conductivity zones towards the well. The VOCs that appear to be migrating to the lower portion of the shallow zone in this area will eventually be captured by the System. The levels of contaminants will be closely monitored in this area of the Site to ensure the continued System effectiveness.

DEEP CONFINED ZONE OF LOWER PATAPSCO AQUIFER

The 1,1-DCE plume has varied in width and concentrations in the deep confined zone of the LPA over the 5-year period that the groundwater remedy has been in operation (Figure 24). The plume width significantly decreased in the southern portion of the Site. The 2021 plume extent is constrained by non-detect or 1,1-DCE concentrations below the Site Cleanup Standard in wells MW-27D and MW-40D to the west and MW-22D to the east. The presence of constituent concentrations at or below the applicable cleanup levels at these well locations indicate no apparent expansion in the width of the contaminant plumes in the deep zone one week after the cessation of groundwater pumping from the deep recovery wells in the southern part of the Site (Figures 20, 21, and 24). When comparing the 2016 and 2021 plumes, it appears that the plume has expanded to the north. However, monitoring well MW-46D was installed on the Verizon property in 2018. The installation of this well provided groundwater quality data for the area immediately north of the Site. The sampling data gives the appearance that the plume has expanded northward when compared to inferred extent prior to the MW-46D installation. The most noticeable difference between the December 2016 and November 2021 plumes is the apparent splitting of the more concentrated portion of the plume (i.e., >50 µg/L) in the southern-most area of the Site. The decrease in 1,1-DCE concentrations at monitoring wells MW-01D, MW-21D, and MW-16D solidified the splitting of the more concentrated portion of the plume, which is a direct result of the remedial pumping.

Overall, the groundwater beneath the portion of the Site with the new buildings contains 1,1-DCE and 1,4-dioxane concentrations above their respective Site-specific Cleanup Standards, although the concentrations have decreased for these constituents since the initiation of remedial pumping. The COC concentrations at monitoring well MW-16D indicate this trend, where between December 2016 (baseline sampling event) and November 2021, 1,1-DCE decreased from 254 µg/L to 98.7 µg/L and 1,4-dioxane decreased from 202 µg/L to 84.5 µg/L. While concentrations of Site contaminants still exceed the numerical criteria Cleanup Standards in a few onsite wells, the data indicates that remedial pumping is removing contaminant mass from this portion of the aquifer, thereby making progress toward actively improving groundwater quality.

4 SUMMARY AND RECOMMENDATIONS

4.1 SUMMARY OF REMEDY PERFORMANCE AND EFFECTIVENESS

System runtime during the 5-year review period was approximately 92%, 94%, 91%, 77%, and 62% during 2017, 2018, 2019, 2020, and 2021, respectively. As previously stated in Section 3.4.1, runtime was significantly reduced during 2020 and 2021 due to multiple extended shutdowns, both scheduled and unplanned. During both 2020 and 2021, there was an extended, planned shutdown to perform onsite *ex-situ* cleaning of the resin to maintain System treatment capacity. There were also several shutdowns in 2020 and 2021 related to the malfunctioning and later replacement of System components. Spare parts for regularly replaced System components are kept onsite to prevent unanticipated extended downtime of the System in the future. The most significant shutdown during 2021 was related to the evaluation of the elevated pH of the boiler blowdown water discharging to the sanitary sewer under the System's wastewater discharge permit. Modifications have been made to the System for ongoing management of the boiler blowdown water[11].

Analysis of treated effluent samples indicate the System is completely removing VOCs. All System effluent samples collected in accordance with the NPDES Permit during the 5-year period were non-detect for VOCs, except for a single event in June 2019. The effluent sample collected during this event contained a very low concentration of 1,1,1-TCA (3.4 µg/L) (Table 2) and was one of only two samples during the 5-year period with a 1,4-dioxane concentration above the Site-specific cleanup level (15 µg/L) at 37 µg/L. Removal of 1,4-dioxane from the extracted groundwater was calculated at approximately 100%, 99.5%, 93.3%, 95.8%, and 98.1% during 2017, 2018, 2019, 2020, and 2021, respectively. The System experienced a reduction in 1,4-dioxane treatment capacity starting in 2019 due to the resin fouling described in Section 2.4.1. System 1,4-dioxane treatment capacity improved in 2020 and 2021 following implementation of regular resin cleaning (Section 2.4.3). The only exceedances of the effluent limits specified in the Permit during the 5-year review period were two isolated metals exceedances - total nickel during November 2021 (Section 2.2.2) and total zinc during March 2017 (Section 3.4.1). Both incidents were isolated, anomalous exceedances believed to be associated with a transient "slug" of water with elevated metals concentrations entering the System.

Groundwater pumping at the recovery wells is achieving effective capture of the onsite COC plumes, thereby preventing the discharge of impacted groundwater to Stony Run and further offsite migration of Site-related contaminants. The general decrease in contaminant concentration, as exhibited by the primary COCs (1,1-DCA, 1,1-DCE and 1,4-dioxane), indicates the System is also achieving a significant degree of mass removal from the aquifer. Given that concentrations of VOCs and 1,4-dioxane remain above the Cleanup Standards in the onsite area, the continued operation of the System is deemed necessary.

[11] Modifications were made to the System during August 2022 for management of the boiler blowdown water. These modifications involved rerouting the blowdown water to an onsite frac tank for subsequent pH adjustment and discharge to the sanitary sewer system in accordance with the County wastewater discharge permit. The long-term approach for management of the boiler blowdown will be the addition of this water to the extracted groundwater flow and routing of the combined water through the System with eventual discharge to Stony Run. For implementation of this permanent solution, Addendum #2 for the renewal application for the NPDES Permit was submitted to MDE on August 5, 2022.

4.2 PROPOSED MODIFICATIONS TO SYSTEM OPERATION, MAINTENANCE, AND MONITORING

4.2.1 HYDRAULIC CONTAINMENT SYSTEM

Based on the continued impacts to the System resin caused by NOC constituents occurring in Site groundwater, WSP recommends *ex-situ* resin cleaning activities continue to be completed regularly to address resin fouling and maintain System treatment capacity. Implementation of resin cleaning, combined with semi-annual resin regeneration resets, resulted in a marked improvement in 1,4-dioxane treatment capacity during 2020 and 2021 (95.8%, and 98.1%) as compared to the diminished treatment capacity during 2019 (93.3%). Completion of the resin cleaning will require System shutdown for an approximately 2 to 3-week period. Completion of the semi-annual regeneration reset will require System shutdown for approximately 2-3 days, twice per year.

During each *ex-situ* resin cleaning event, a significant volume (approximately 9,000 gallons) of wastewater is generated during the process. As stated in Section 2.3.2, the spent caustic solution containing desorbed organics from the resin cleaning and the high pH, organic-rich water produced during the post-cleaning regenerations of each vessel is containerized in a double-walled frac tank and neutralized using hydrochloric acid. Following characterization of the neutralized wastewater and approval from the County, the wastewater generated during the 2021 cleaning event was discharged to the sanitary sewer system under the System's wastewater discharge permit. WSP plans to request a modification to the wastewater discharge permit to allow for discharge of the resin cleaning wastewater to the sanitary sewer system in lieu of regularly submitting discharge requests to the County.

Based on System observations made during 2022, WSP recommends conducting an assessment and potential rehabilitation of the System recovery wells every 2 years to mitigate biofouling impacts. Short-term pumping tests completed during June 2022 indicated a significant reduction in yield, or well discharge per foot of drawdown, of each of the shallow recovery wells but no reduction in performance of the deep recovery wells as compared to baseline data from fall 2016. A down-well camera survey conducted at each recovery well indicated the existence of significant biofouling deposits on the well screens and iron-containing solids at the bottom of each of the shallow recovery wells. Chemical rehabilitation and redevelopment of the shallow recovery wells to address the biofouling impacts completed during July 2022 resulted in a significant increase in well yield at RW-1S and RW-2S, with values consistent with data from the baseline tests conducted following the installation of the wells in the fall of 2016.

4.2.2 GROUNDWATER MONITORING ACTIVITIES

In accordance with the approved Groundwater Monitoring Program Plan (WSP, 2015b), water levels are gauged in monitoring wells and recovery well piezometers semi-annually, and groundwater samples are collected from the designated wells for analysis of VOCs and 1,4-dioxane semi-annually or annually. The 5-year CMI review included a qualitative evaluation of the groundwater monitoring data collected to date. Based on this review, WSP proposes no changes to the following aspects of the groundwater monitoring program.

- Locations and frequency for the collection of groundwater level data.
- Locations for the collection of groundwater quality samples from the shallow and deep zones of the LPA.
- Groundwater samples will continue to be collected semi-annually from all recovery wells.

After evaluating the groundwater quality data, WSP recommends a reduction in the sampling frequency of three monitoring wells: MW-05R, MW-18, and MW-40D. The proposed revisions to the sampling program are provided in the following table.

Proposed Revisions to Sampling Program

WELL	CURRENT FREQUENCY	REVISED FREQUENCY
MW-05R	Semi-annual	Annual
MW-18	Semi-annual	Annual
MW-40D	Semi-annual	Annual

The technical rationale for the proposed changes to the sampling program are provided in the table below.

Reasons for Proposed Changes to Sampling Program

WELL	REASON TO DECREASE FREQUENCY
MW-05R	➢ Well provides spatially redundant information with nearby well MW-42. ➢ Contaminant concentrations have been consistently below the cleanup standards. ➢ Based on Mann-Kendall trend testing, the contaminant concentrations have been generally stable and are not expected to change significantly over time.
MW-18	➢ Contaminant concentrations have been consistently below laboratory detection limits. ➢ Concentrations are not expected to change significantly over time.
MW-40D	➢ Contaminant concentrations have been consistently below laboratory detection limits during the last 3 years of groundwater monitoring (2019 through 2021). ➢ Concentrations are not expected to change significantly over time.

No other changes to the sampling of the monitoring wells are proposed at this time. The revised groundwater sampling program, pending approval by the EPA and MDE, would be implemented beginning in 2023. WSP may propose additional changes to the groundwater monitoring program in the future based on the continued evaluation of the sampling data.

REFERENCES

- GSI Environmental Inc. 2012. GSI Mann-Kendall Toolkit for Constituent Trend Analysis. User's Manual. Version 1.0. November.
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- United States Environmental Protection Agency. 2001. Office of Solid Waste and Emergency Response [OSWER] Directive 9355.7-03B-P. *Comprehensive Five-Year Review Guidance*. July 17.
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- WSP. 2015a. Response Action Plan Revision 2.0. October 2.
- WSP. 2015b. Groundwater Monitoring Plan Revision 1.0. September 17.
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- WSP. 2018. Operation, Maintenance & Monitoring Manual Revision 3.0. May 24.
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- WSP. 2021. 2020 Operations, Maintenance, & Monitoring Report – Hydraulic Containment and Treatment System. July 30.

ACRONYMS

µg/L	micrograms per liter
AOC	Area of Concern
bgs	below ground surface
CF	Confidence Factor
CMI	Corrective Measures Implementation
COC	constituent of concern
CVOC	chlorinated volatile organic compound
DCA	dichloroethane
DCE	dichloroethene
ECT2	Emerging Compounds Treatment Technologies
EPA	United States Environmental Protection Agency
EQ	flow equalization
GAC	granular activated carbon
GPM	gallons per minute
lbs	pounds
LPA	Lower Patapsco Aquifer
MDE	Maryland Department of the Environment
NOC	natural organic carbon
NPDES	National Pollutant Discharge Elimination System
OM&M	operations, maintenance, and monitoring
OSWER	Office of Solid Waste and Emergency Response
PCE	tetrachloroethene
RAO	Response Action Objective
RAP	Response Action Plan
RTI	Recirculation Technologies, LLC
SIM	Selected Ion Monitoring
SM	Standard Method
SMP	Soil Management Plan
TCA	trichloroethane
TCE	trichloroethene
TOC	total organic carbon
URIP	Use Restriction Implementation Plan
VFD	variable frequency drive
VOC	volatile organic compound

FIGURES

MW-46D

MW-27D

VERIZON

POND

RIPRAP

OUTFALL 001

STONY RUN

MW-23D

CATALENT BUILDING 1

TREATMENT EQUIPMENT BUILDING

MW-03

MW-43

MW-09

MW-39

MW-45

RW-1S

MW-38R

MW-20

MW-04

MW-16

MW-16D

MW-42

MW-18

RW-2S

MW-05R

MW-40D

CATALENT BUILDING 2

RW-3S

MW-22D

MW-41D

MW-44

MW-01

MW-21D

RW-1D

RW-2D

MW-01D

MW-24D

POND

LEGEND

- MW-05 WATER TABLE MONITORING WELL
- MW-18 LOWER UNCONFINED AQUIFER MONITORING WELL
- MW-21D CONFINED AQUIFER MONITORING WELL
- RW-2S SHALLOW EXTRACTION WELL
- RW-2D DEEP EXTRACTION WELL
- JUNCTION BOX/VALVE BOX
- WATER DISCHARGE/POWER SUPPLY TRENCH
- TREATED WATER EFFLUENT DISCHARGE
- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA

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REVISIONS

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2	Revised:			
3	Revised:			

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HYDRAULIC CONTAINMENT SYSTEM AND MONITORING WELL LOCATIONS

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HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

WSP USA Inc.
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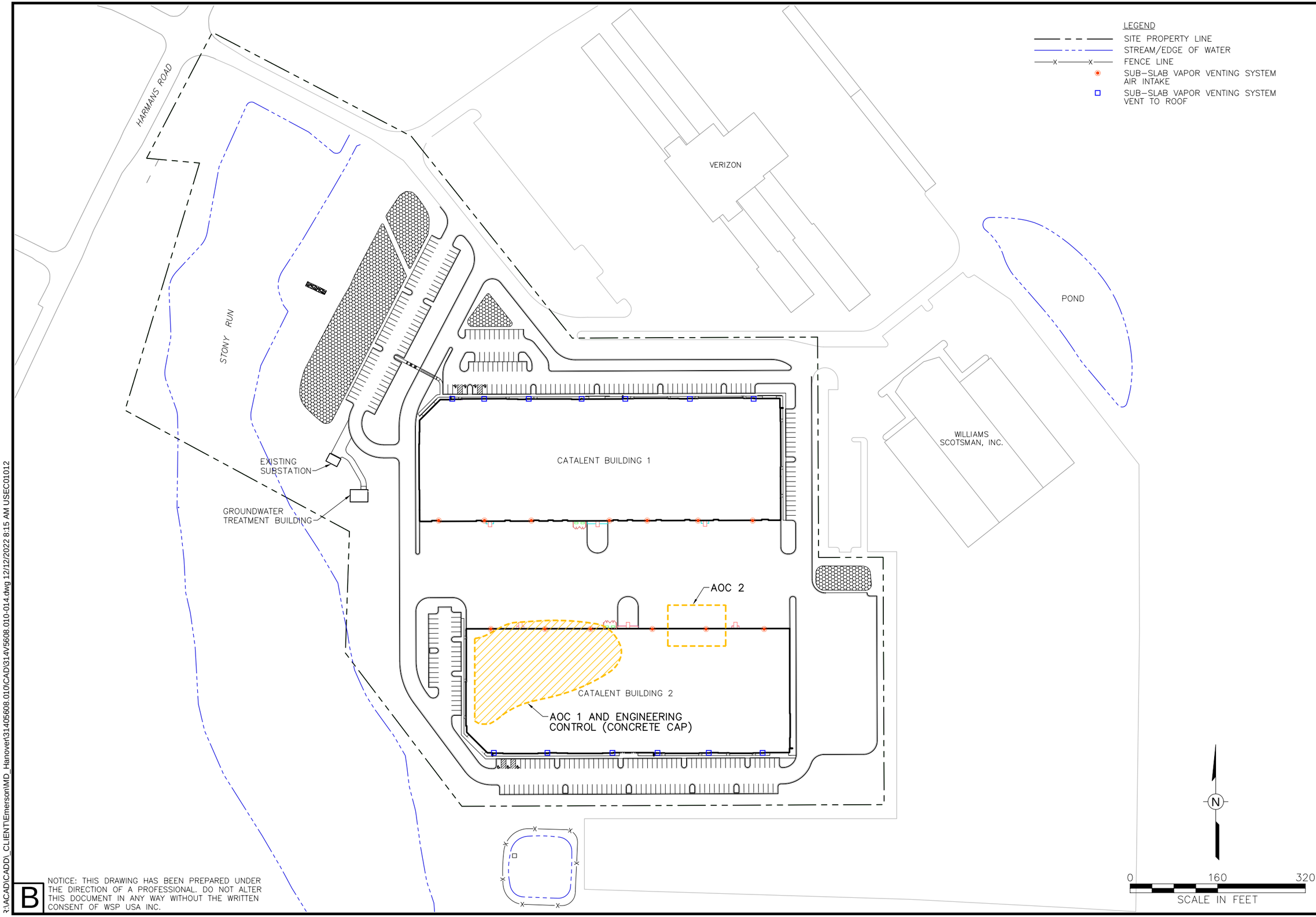
TEL.: +1 703.709.6500

FIGURE 1

Drawing Number
314V1545.010-108



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Approved: REJ 12/12/2022
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FIGURE 2

SITE AREAS OF CONCERN AND ENGINEERING CONTROLS

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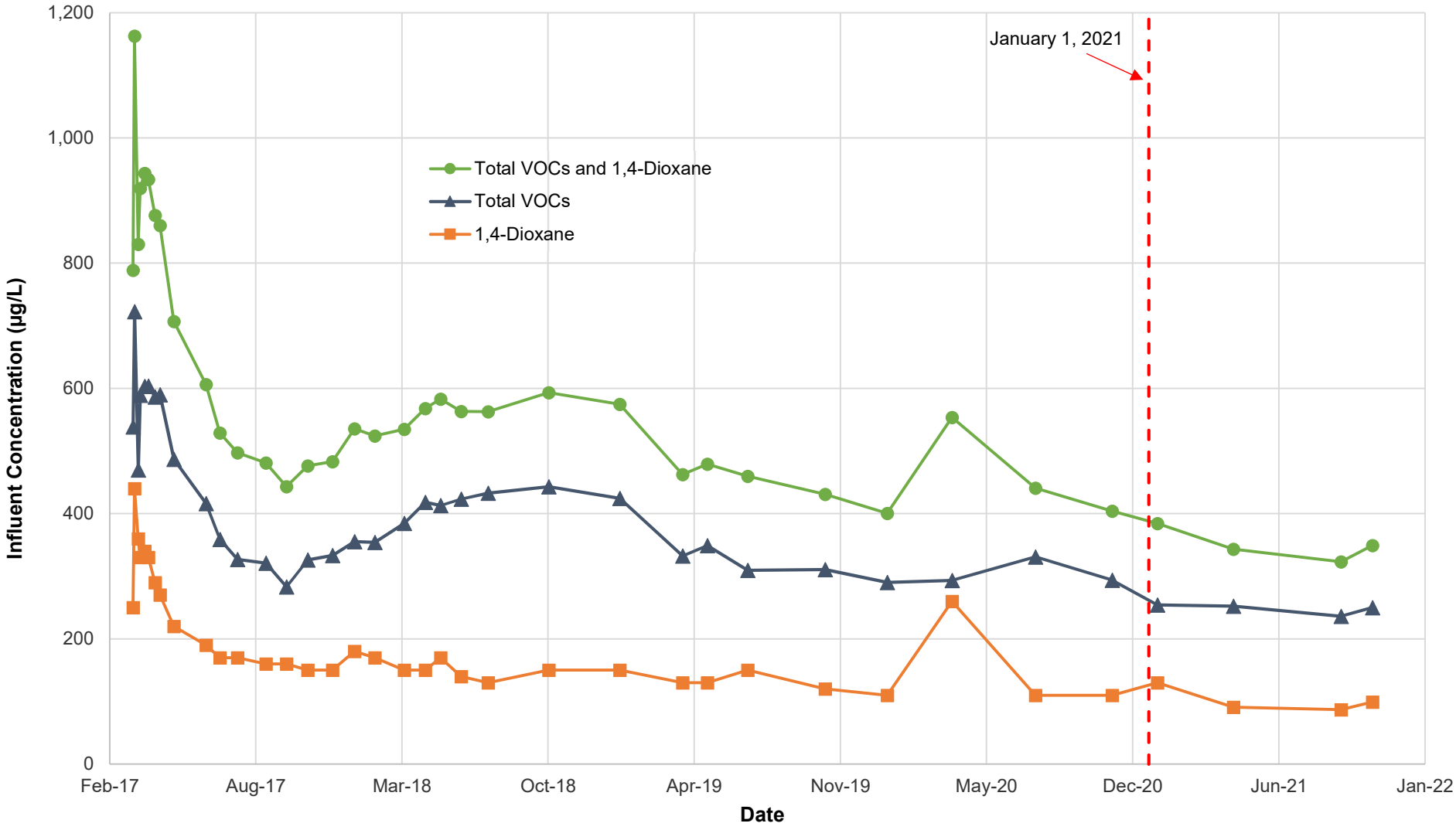

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703-709-6500

Figure 3
Historical Influent Concentrations
Former Kop-Flex Facility Site
Hanover, Maryland

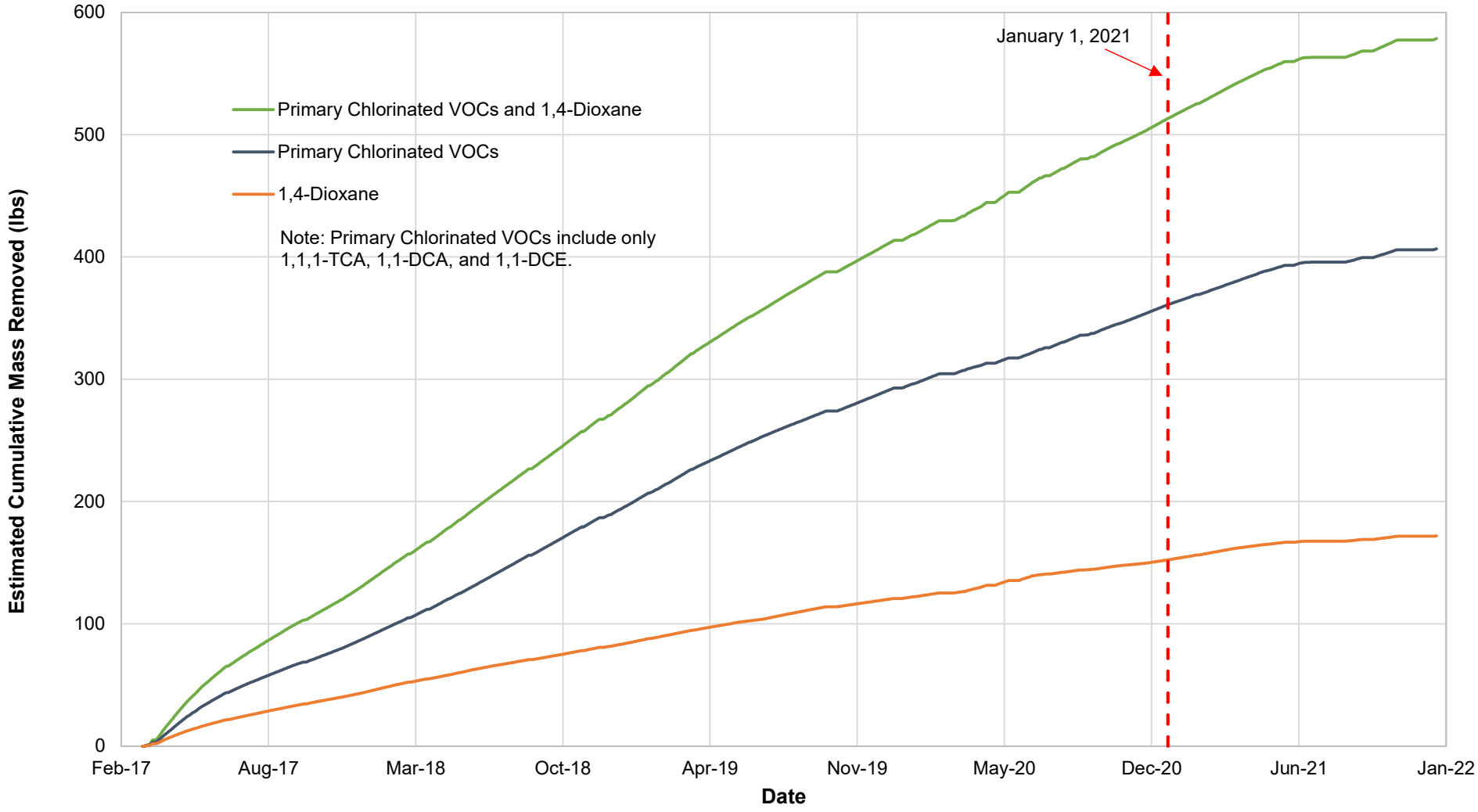

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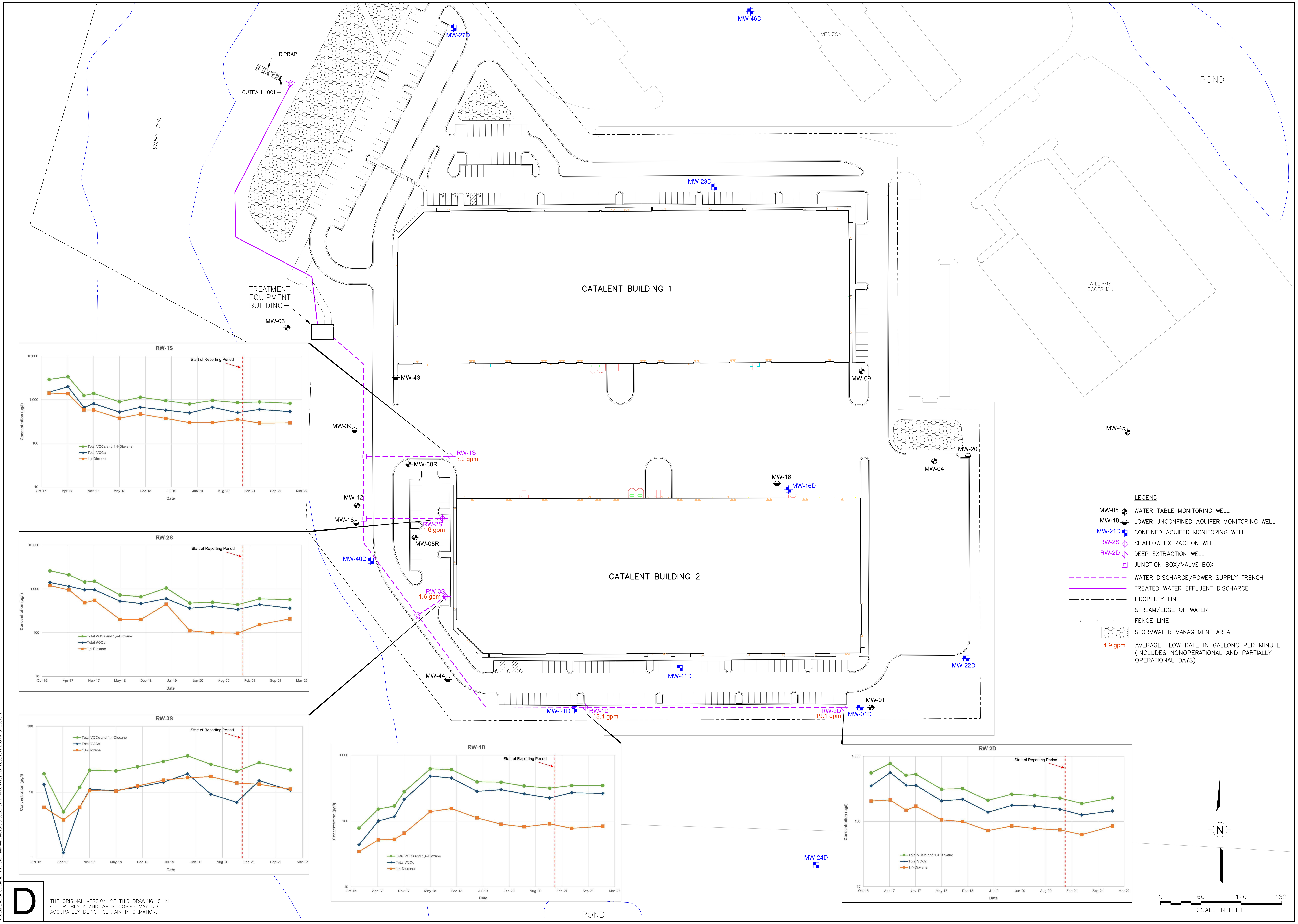
Figure 4
Cumulative Mass Removal
Former Kop-Flex Facility Site
Hanover, Maryland



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MASS RECOVERY PER WELL

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FIGURE 5

Drawing Number
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VERIZON

MW-46D

MW-27D

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

MW-23D

CATALENT BUILDING 1

MW-03

TREATMENT EQUIPMENT BUILDING

MW-43

MW-09

MW-39

MW-45

MW-20

MW-04

RW-1S

MW-38R

MW-16

MW-16D

MW-42

MW-18

RW-2S

MW-05R

MW-40D

CATALENT BUILDING 2

RW-3S

MW-22D

MW-44

MW-41D

MW-01D

MW-21D

RW-1D

RW-2D

MW-01

MW-24D

RW-1S	5/9/21	12/29/21
1,1-DCA	***113***	***99.4***
1,2-DCA	ND	ND
1,1-DCE	***389***	***368***
1,4-Dioxane	***291***	***294***
1,1,1-TCA	72.5	49.2
TCE	2.9	ND

RW-2S	5/9/21	12/29/21
1,1-DCA	***32.4***	***32.7***
1,2-DCA	ND	ND
1,1-DCE	***184***	***184***
1,4-Dioxane	***153***	***207***
1,1,1-TCA	***221***	147
TCE	2.1	ND

RW-3S	5/9/21	12/29/21
1,1-DCA	2.7	2.3
1,2-DCA	ND	ND
1,1-DCE	4.2	3.2
1,4-Dioxane	13.2	11.1
1,1,1-TCA	8.1	5.2
TCE	ND	ND

RW-1D	5/9/21	12/29/21
1,1-DCA	***52.4***	***51.4***
1,2-DCA	ND	ND
1,1-DCE	***204***	***202***
1,4-Dioxane	***77.7***	***83.7***
1,1,1-TCA	5.5	4.5
TCE	ND	ND

RW-2D	5/9/21	12/29/21
1,1-DCA	***16.8***	***20.2***
1,2-DCA	1.1	1.1
1,1-DCE	***104***	***120***
1,4-Dioxane	***62.8***	***85.1***
1,1,1-TCA	4.2	4.0
TCE	ND	ND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

RW-1S	5/9/21	12/29/21
1,1-DCA	***113***	***99.4***
1,2-DCA	ND	ND
1,1-DCE	***389***	***368***
1,4-Dioxane	***291***	***294***
1,1,1-TCA	72.5	49.2
TCE	2.9	ND

WELL ID

DATE

CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)

CONSTITUENT

ND	NON DETECT
1,1-DCA	1,1–DICHLOROETHANE
1,2-DCA	1,2–DICHLOROETHANE
1,1-DCE	1,1–DICHLOROETHENE
1,1,1-TCA	1,1,1–TRICHLOROETHANE
TCE	TRICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5

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FIGURE 6

GROUNDWATER RECOVERY WELL RESULTS (2021)

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STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03

MW-43

MW-09 114.75

MW-39

MW-38R 106.85

RW-1S

MW-42 107.92

MW-18

RW-2S

MW-05R

RW-3S

MW-44

MW-16

MW-20

MW-04 114.65

MW-45 114.03

MW-01 115.05

107 108 109 110 111 112 113 114 115

POND

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- 114.65 GROUNDWATER SURFACE ELEVATION (FEET MSL)
- GROUNDWATER SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

0 140 280

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FIGURE 7

WATER TABLE CONTOUR MAP
(MAY 2021)

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SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

CATALENT BUILDING 1

CATALENT BUILDING 2

TREATMENT EQUIPMENT BUILDING

MW-03 107.20

MW-43 101.78

MW-39 101.62

MW-38R

RW-1S 97.90

RW-2S 88.65

MW-42

MW-18 98.39

MW-05R

RW-3S 100.04

MW-44 110.84

MW-09

MW-16 112.85

MW-04

MW-20 114.18

MW-01

106

104

108

110

94

96

98

100

102

112

114

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- 112.34 PIEZOMETRIC SURFACE ELEVATION (FEET MSL)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

0 140 280

SCALE IN FEET

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DWG Name: 314V1545.010-112

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 8

PIEZOMETRIC SURFACE CONTOUR MAP FOR THE LOWER PORTION OF THE SHALLOW ZONE OF THE LOWER PATASPCO AQUIFER (MAY 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

MW-46D
88.82

MW-27D
88.31

STONY RUN

88

POND

N

MW-23D
87.84

WILLIAMS
SCOTSMAN, INC.

88

CATALENT BUILDING 1

TREATMENT
EQUIPMENT
BUILDING

86

MW-16D
85.29

86

MW-40D
85.10

84

CATALENT BUILDING 2

MW-22D
84.13

84

MW-41D

82

MW-21D
77.66

RW-1D

RW-2D

MW-01D
71.94

82

74

76

80

78

MW-24D
79.09

80

POND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- DEEP MONITORING WELL
- DEEP EXTRACTION WELL
- 84.13 POTENTIOMETRIC SURFACE ELEVATION (FEET MSL)
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

0 140 280
SCALE IN FEET

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FORMER KOP-FLEX FACILITY SITE
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EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 9

POTENTIOMETRIC SURFACE CONTOUR MAP
FOR THE DEEP ZONE OF THE
LOWER PATAPSCO AQUIFER (MAY 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 107.74

MW-43

MW-09 114.25

MW-39

MW-38R 109.71

RW-1S

RW-2S

RW-3S

MW-42 110.26

MW-18

MW-05R 109.98

MW-16

MW-44

MW-01 114.45

MW-45 113.37

MW-20

MW-04 113.97

108 109 110 111 112 113 114 114 114

POND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- 114.45 GROUNDWATER SURFACE ELEVATION (FEET MSL)
- GROUNDWATER SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

NOTE:
THE NOVEMBER 2021 GROUNDWATER ELEVATIONS ARE REPRESENTATIVE OF NON-PUMPING CONDITIONS.

0 140 280
SCALE IN FEET

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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
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ST. LOUIS, MISSOURI

FIGURE 10

WATER TABLE CONTOUR MAP, NON-PUMPING CONDITIONS (NOVEMBER 2021)

WSP USA Inc.
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SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

STONY RUN

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

WILLIAMS SCOTSMAN, INC.

POND

POND

MW-03

MW-43 *102.70*

MW-39 *103.31*

MW-38R

RW-1S *109.62*

MW-42

RW-2S *107.48*

MW-18 *103.68*

MW-05R

RW-3S *109.71*

MW-44 *111.89*

MW-09

MW-16 *112.95*

MW-04

MW-20 *114.06*

MW-01

104 106 108 110 112 114

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- *112.95* PIEZOMETRIC SURFACE ELEVATION (FEET MSL)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

NOTE:
THE NOVEMBER 2021 GROUNDWATER ELEVATIONS ARE REPRESENTATIVE OF NON-PUMPING CONDITIONS.

0 140 280
SCALE IN FEET

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ST. LOUIS, MISSOURI

FIGURE 11

PIEZOMETRIC SURFACE CONTOUR MAP FOR THE LOWER PORTION OF THE SHALLOW ZONE OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

MW-46D
89.15

MW-27D
88.48

STONY RUN

POND

MW-23D
88.45

88

WILLIAMS
SCOTSMAN, INC.

CATALENT BUILDING 1

TREATMENT
EQUIPMENT
BUILDING

MW-16D
87.04

MW-40D
86.64

CATALENT BUILDING 2

MW-22D
85.49

MW-41D

MW-01D
84.20

MW-21D
84.80

RW-1D

RW-2D

86

84

82

80

MW-24D
79.70

POND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- DEEP MONITORING WELL
- DEEP EXTRACTION WELL
- 84.20 POTENTIOMETRIC SURFACE ELEVATION (FEET MSL)
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

0 140 280
SCALE IN FEET

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Approved: RJT 1/21/2022
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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 12

POTENTIOMETRIC SURFACE CONTOUR MAP FOR THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

R:\ACAD\CADD_CLIENT\Emerson\MD_Hanover\31401545.010\CAD\314V1545.010-089.dwg 11/30/2022 4:45 PM USEC01012

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VERIZON

MW-46D

MW-27D

STONY RUN

POND

MW-23D

CATALENT BUILDING 1

CATALENT BUILDING 2

TREATMENT EQUIPMENT BUILDING

WILLIAMS SCOTSMAN, INC.

MW-03

MW-39

MW-38R

MW-42

MW-18

MW-43

MW-09

MW-16

MW-20

MW-45

MW-04

MW-01

MW-05R

MW-44

RW-1S

RW-2S

RW-3S

MW-40D

MW-16D

MW-41D

MW-22D

MW-21D

RW-1D

RW-2D

MW-01D

MW-24D

MW-43	5/9/21	11/14/21
1,1-DCA	2.7	2.6
1,2-DCA	ND	ND
1,1-DCE	***31.7***	***31.3***
1,4-Dioxane	***34.1***	***34.3***
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-03	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-39	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-38R	5/9/21	11/14/21
1,1-DCA	***5.5***	***6.7***
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	***47***	***46.2***
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-42	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	13.3	12.5
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-18	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-09	5/9/21	11/14/21
1,1-DCA	***3***	2.5
1,2-DCA	ND	ND
1,1-DCE	***56.3***	***53.3***
1,4-Dioxane	***23.6***	***22.6***
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-16	5/9/21	11/14/21
1,1-DCA	***169***	***1,350***
1,2-DCA	ND	ND
1,1-DCE	***276***	***1,630***
1,4-Dioxane	***19.3***	***76.0***
1,1,1-TCA	123	***1,720***
TCE	***6.2***	ND

MW-20	5/9/21	11/14/21
1,1-DCA	***214***	***256***
1,2-DCA	***7.5***	***8.7***
1,1-DCE	***267***	***321***
1,4-Dioxane	***1,010***	***1,210***
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-04	5/9/21	11/14/21
1,1-DCA	***130***	***82.7***
1,2-DCA	2.9	1.2
1,1-DCE	***361***	***175***
1,4-Dioxane	***303***	***134***
1,1,1-TCA	3.4	ND
TCE	ND	1.5

MW-05R	5/9/21	11/14/21
1,1-DCA	NS	1.6
1,2-DCA	NS	ND
1,1-DCE	NS	1.4
1,4-Dioxane	NS	12
1,1,1-TCA	NS	2.4
TCE	NS	ND

MW-44	5/9/21	11/14/21
1,1-DCA	1.7	***3.8***
1,2-DCA	ND	ND
1,1-DCE	2.9	***7.2***
1,4-Dioxane	10.2	13.3
1,1,1-TCA	6.9	15.4
TCE	ND	ND

MW-01	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

MW-20	5/9/21	11/14/21
1,1-DCA	***214***	***256***
1,2-DCA	***7.5***	***8.7***
1,1-DCE	***267***	***321***
1,4-Dioxane	***1,010***	***1,210***
1,1,1-TCA	ND	ND
TCE	ND	ND

WELL ID

DATE

CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)

CONSTITUENT

ND NON DETECT

NS NOT SAMPLED

1,1-DCA 1,1–DICHLOROETHANE

1,2-DCA 1,2–DICHLOROETHANE

1,1-DCE 1,1–DICHLOROETHENE

1,1,1-TCA 1,1,1–TRICHLOROETHANE

TCE TRICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5

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0 140 280

SCALE IN FEET

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DWG Name: 314V1545.010-116

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 13

SAMPLING RESULTS FOR THE MONITORING WELLS SCREENED IN THE SHALLOW ZONE OF THE LOWER PATAPSCO AQUIFER (2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

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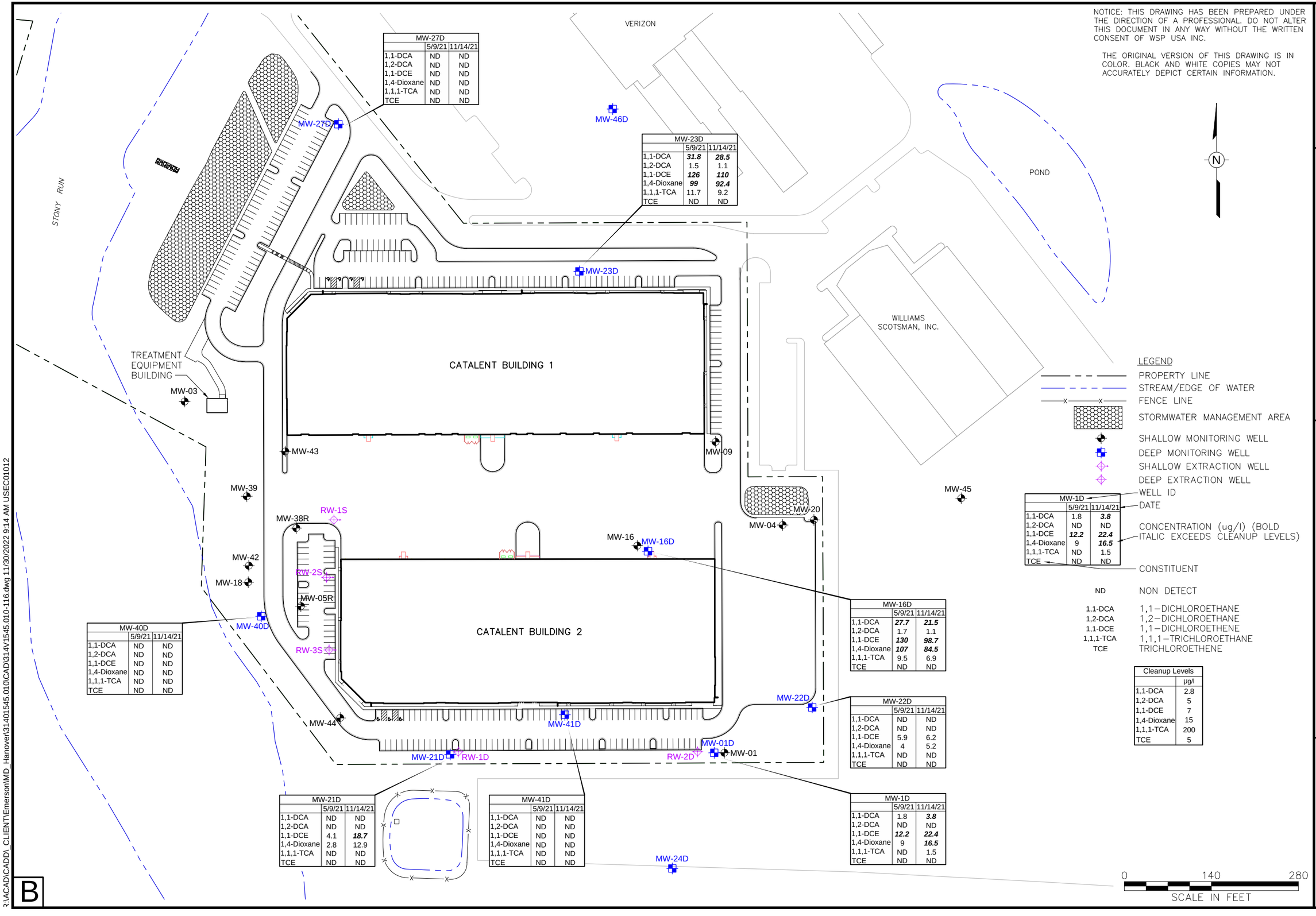
FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 14

SAMPLING RESULTS FOR THE MONITORING WELLS SCREENED IN THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER (2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500



MW-27D	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-23D	5/9/21	11/14/21
1,1-DCA	***31.8***	***28.5***
1,2-DCA	1.5	1.1
1,1-DCE	***126***	***110***
1,4-Dioxane	***99***	***92.4***
1,1,1-TCA	11.7	9.2
TCE	ND	ND

MW-40D	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-16D	5/9/21	11/14/21
1,1-DCA	***27.7***	***21.5***
1,2-DCA	1.7	1.1
1,1-DCE	***130***	***98.7***
1,4-Dioxane	***107***	***84.5***
1,1,1-TCA	9.5	6.9
TCE	ND	ND

MW-22D	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	5.9	6.2
1,4-Dioxane	4	5.2
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-21D	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	4.1	***18.7***
1,4-Dioxane	2.8	12.9
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-41D	5/9/21	11/14/21
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-1D	5/9/21	11/14/21
1,1-DCA	1.8	***3.8***
1,2-DCA	ND	ND
1,1-DCE	***12.2***	***22.4***
1,4-Dioxane	9	***16.5***
1,1,1-TCA	ND	1.5
TCE	ND	ND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

MW-1D — WELL ID

5/9/21 11/14/21 — DATE

CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)

TCE — CONSTITUENT

ND — NON DETECT

1,1-DCA	1,1-DICHLOROETHANE
1,2-DCA	1,2-DICHLOROETHANE
1,1-DCE	1,1-DICHLOROETHENE
1,1,1-TCA	1,1,1-TRICHLOROETHANE
TCE	TRICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5

B

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 ND

MW-09 23.6

MW-43 34.1

MW-39

MW-38R 47

RW-1S

MW-42 13.3

RW-2S

MW-18

MW-5R

RW-3S

MW-44 10.2

MW-01 ND

MW-16 19.3

MW-45

MW-20

MW-04 303

106

108

110

104

112

114

94

96

98

100

102

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ND NON-DETECT
- 303 1,4-DIOXANE CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW VECTOR

15 µg/l SITE-SPECIFIC 1,4-DIOXANE GROUNDWATER QUALITY STANDARD

1,4-DIOXANE CONCENTRATIONS IN µg/l:

- 4.6 TO <50
- 50 TO <100
- >100

0 140 280

SCALE IN FEET

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DWG Name: 314V5608.010-007

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 15

1,4-DIOXANE ISOCONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

MW-46D
99.3

MW-27D
ND

STONY RUN

88

MW-23D
99

POND

WILLIAMS
SCOTSMAN, INC.

CATALENT BUILDING 1

TREATMENT
EQUIPMENT
BUILDING

86

MW-16D
107

MW-40D
ND

CATALENT BUILDING 2

84

MW-22D
4

MW-41D

82

MW-21D
2.8

RW-1D

RW-2D

MW-01D

74

76

78

MW-24D
299

80

POND

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- DEEP MONITORING WELL
- DEEP EXTRACTION WELL
- *ND* NON-DETECT
- *79.8* 1,4-DIOXANE CONCENTRATION ($\mu g/l$)
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW VECTOR

15 $\mu g/l$ SITE-SPECIFIC 1,4-DIOXANE GROUNDWATER QUALITY STANDARD

1,4-DIOXANE CONCENTRATIONS IN $\mu g/l$:
- 4.6 TO <50
- 50 TO <100
- >100

0 140 280
SCALE IN FEET

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Checked: MVL 11/9/2022
Approved: [illegible] 11/22/2022
DWG Name: 314V5608.010-008

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 16

1,4-DIOXANE CONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE DEEPER CONFINED PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 ND

MW-43 31.3

MW-09 53.3

MW-39

MW-38R ND

RW-1S

RW-2S

MW-42 ND

MW-18

MW-5R 1.4

RW-3S

MW-44 7.2

MW-16 1,630

MW-04 175

MW-20

MW-45

MW-01 ND

104 106 108 110 112 114

POND

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ND NON-DETECT
- 53.3 1,1-DCE CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)

1,1-DCE CONCENTRATIONS IN µg/l:

- 7 TO <50
- 50 TO <100
- 100 TO <500
- 500 TO 1,000
- >1,000

0 140 280

SCALE IN FEET

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DWG Name: 314V5608.010-004

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 17

1,1-DCE ISOCONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED PORTION OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

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STONY RUN

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

WILLIAMS SCOTSMAN, INC.

POND

POND

MW-03 ND

MW-43 2.6

MW-09 2.5

MW-39

MW-38R 6.7

RW-1S

RW-2S

RW-3S

MW-42 ND

MW-18

MW-5R 1.6

MW-44 3.8

MW-16 1,350

MW-04 82.7

MW-20

MW-45

MW-01 ND

104 106 108 110 112 114

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ND NON-DETECT
- 82.7 1,1-DCA CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)

1,1-DCA CONCENTRATIONS IN µg/l:

- 2.8 TO <50
- 50 TO <100
- 100 TO <500
- 500 TO 1,000
- >1,000

0 140 280

SCALE IN FEET

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EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 18

1,1-DCA ISOCONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED PORTION OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

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HERNDON, VA 20171
TEL: +1 703.709.6500

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 ND

MW-43 34.3

MW-09 22.6

MW-39

MW-38R 46.2

RW-1S

MW-42 12.5

MW-18

RW-2S

MW-5R 12

RW-3S

MW-44 13.3

MW-01 ND

MW-16 76

MW-45

MW-04 134

MW-20

104 106 108 110 112 114

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ND NON-DETECT
- 134 1,4-DIOXANE CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)

1,4-DIOXANE CONCENTRATIONS IN µg/l:

15 µg/l SITE-SPECIFIC 1,4-DIOXANE GROUNDWATER QUALITY STANDARD

- 4.6 TO <50
- 50 TO <100
- >100

0 140 280

SCALE IN FEET

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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 19

1,4-DIOXANE ISOCONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED PORTION OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

WSP USA Inc.
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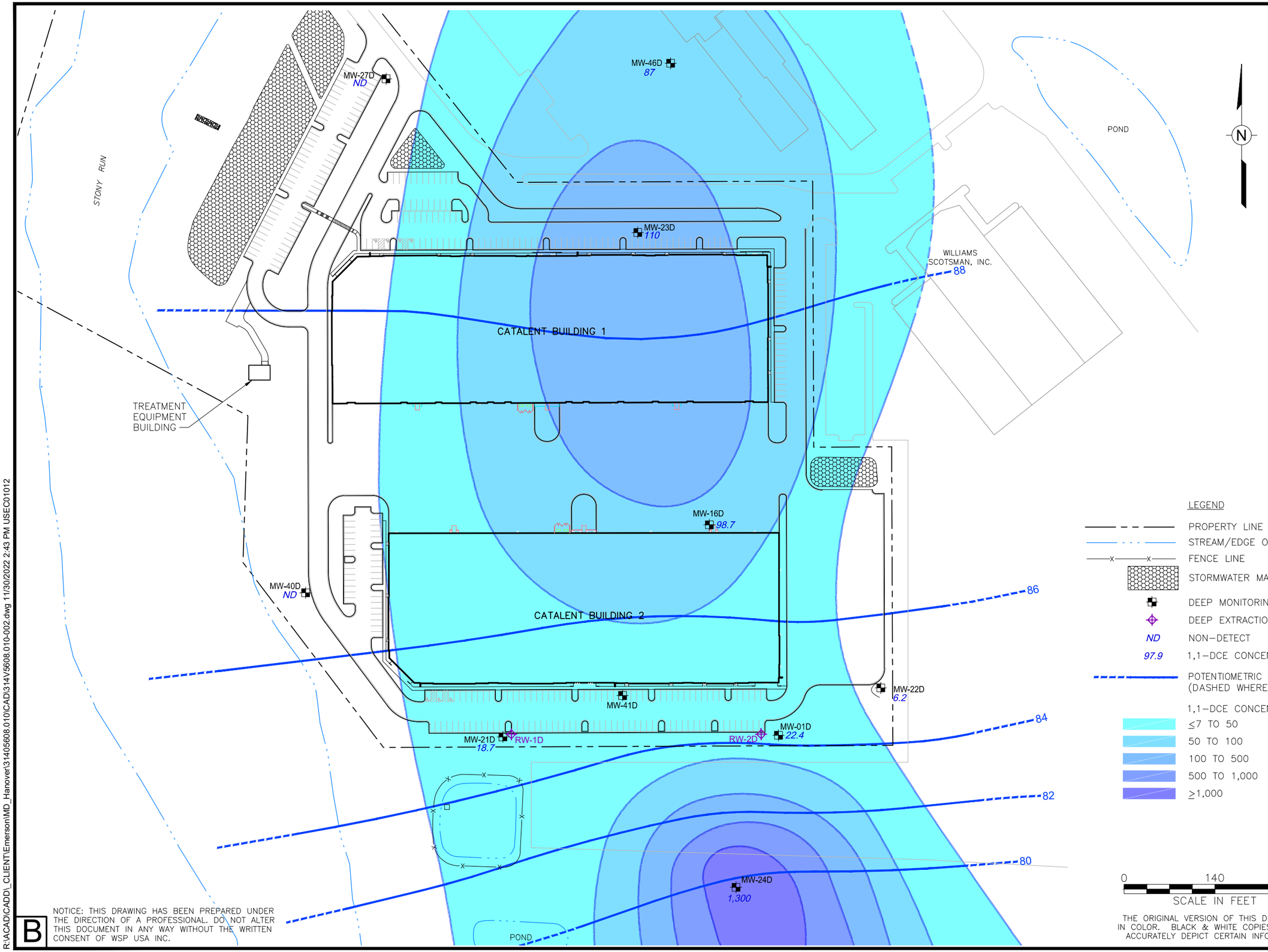

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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 20

1,1-DCE ISOCONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE DEEPER CONFINED PORTION OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

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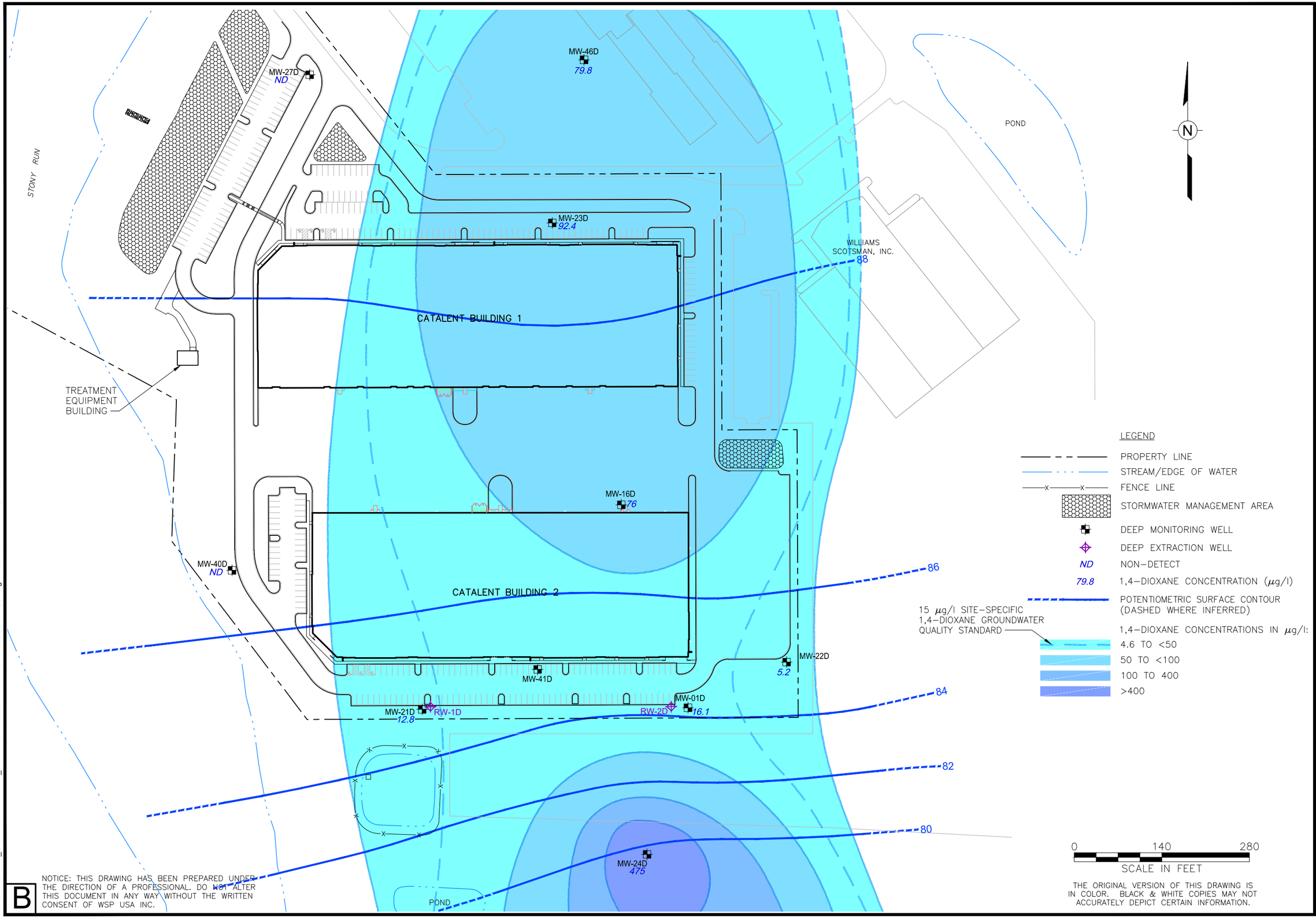
HERNDON, VA 20171
TEL: +1 703.709.6500



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Approved: RSG 11/22/2022
DWG Name: 314V5608.010-003

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 21

1,4-DIOXANE CONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE DEEPER CONFINED PORTION OF THE LOWER PATAPSCO AQUIFER, NON-PUMPING CONDITIONS (NOVEMBER 2021)

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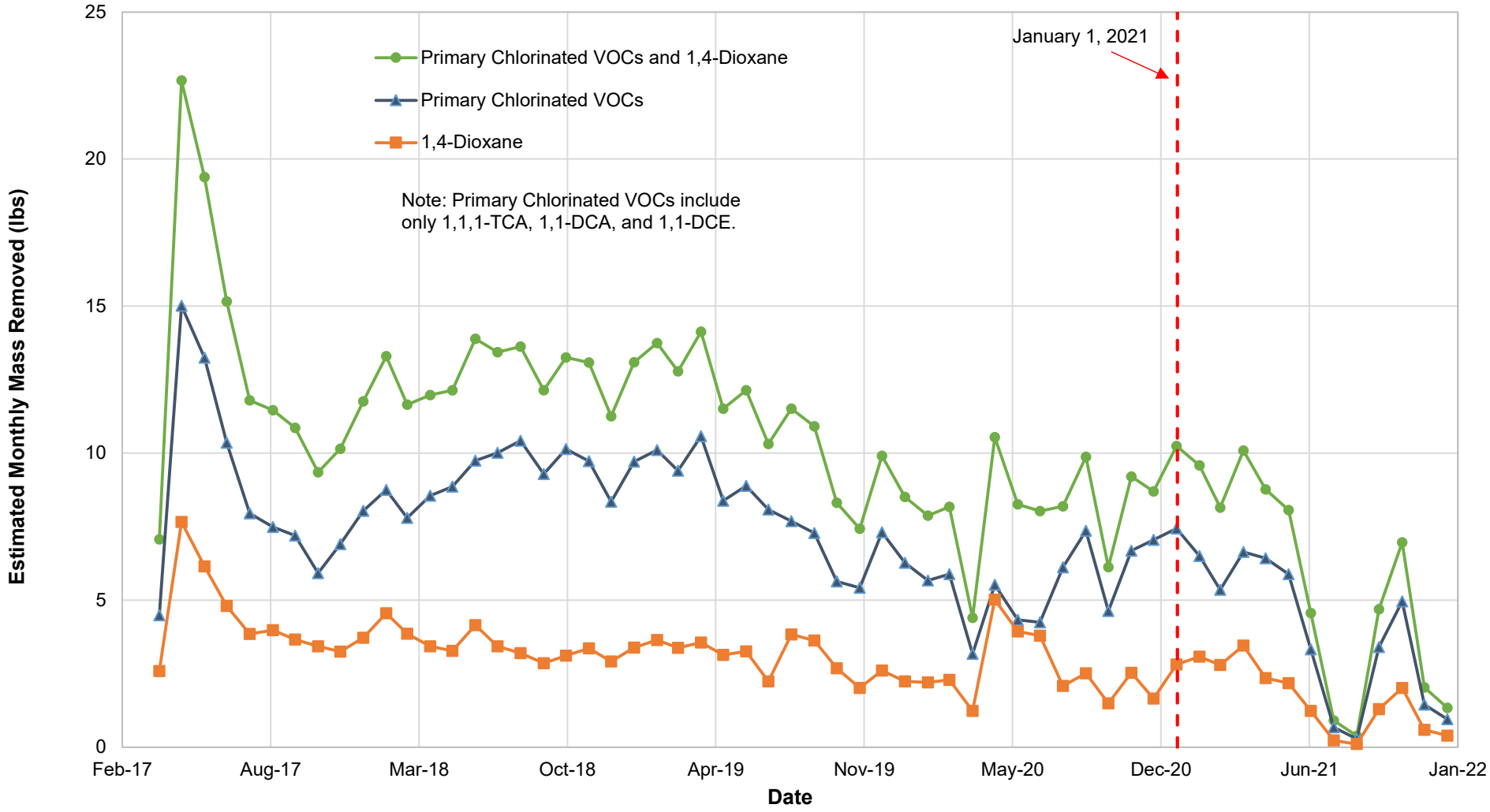
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500



WSP USA Inc.
13530 Dulles Technology Drive Suite 300
Herndon, Virginia 20171
703-709-6500

Figure 22
Monthly Mass Removal
Former Kop-Flex Facility Site
Hanover, Maryland

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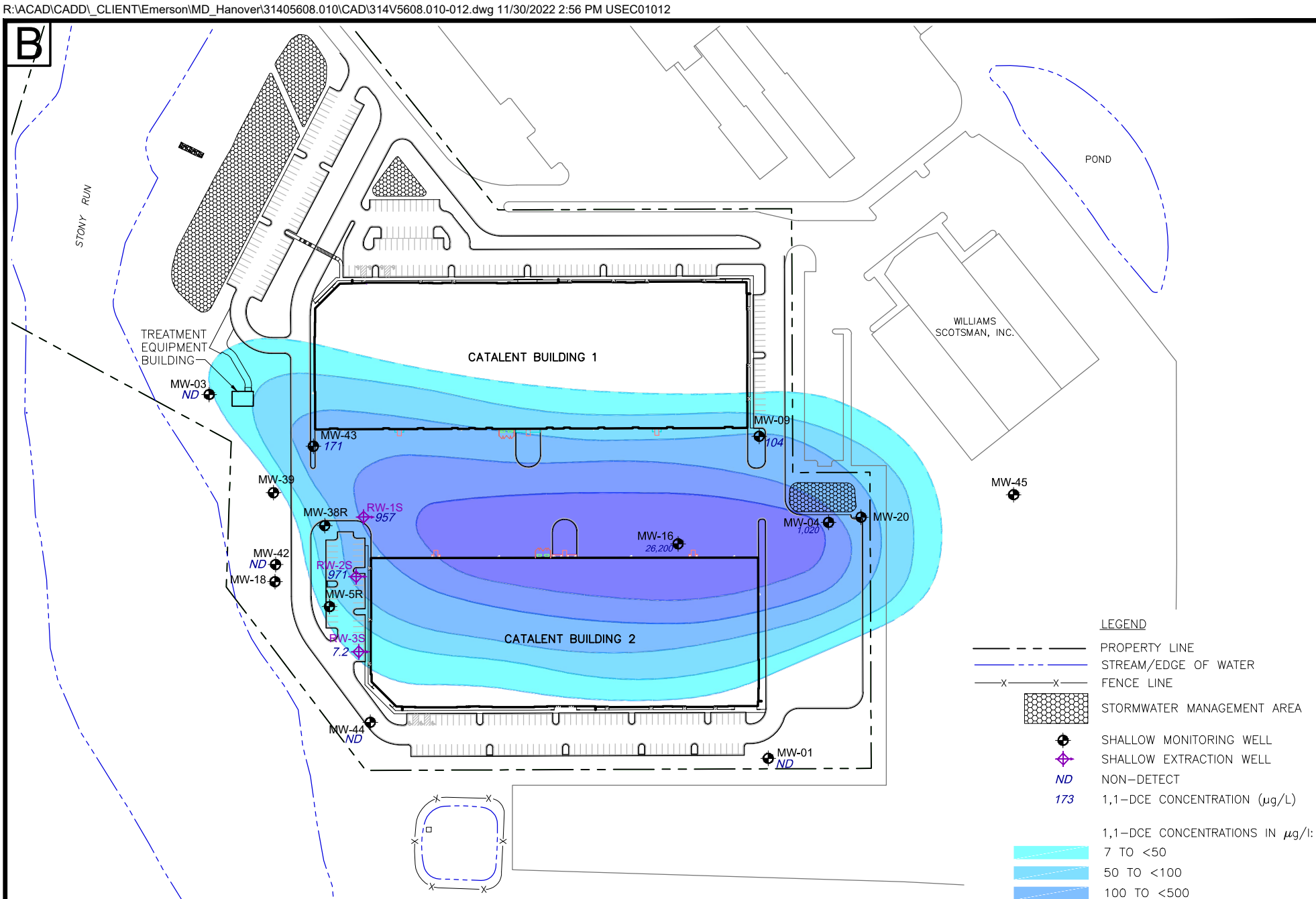
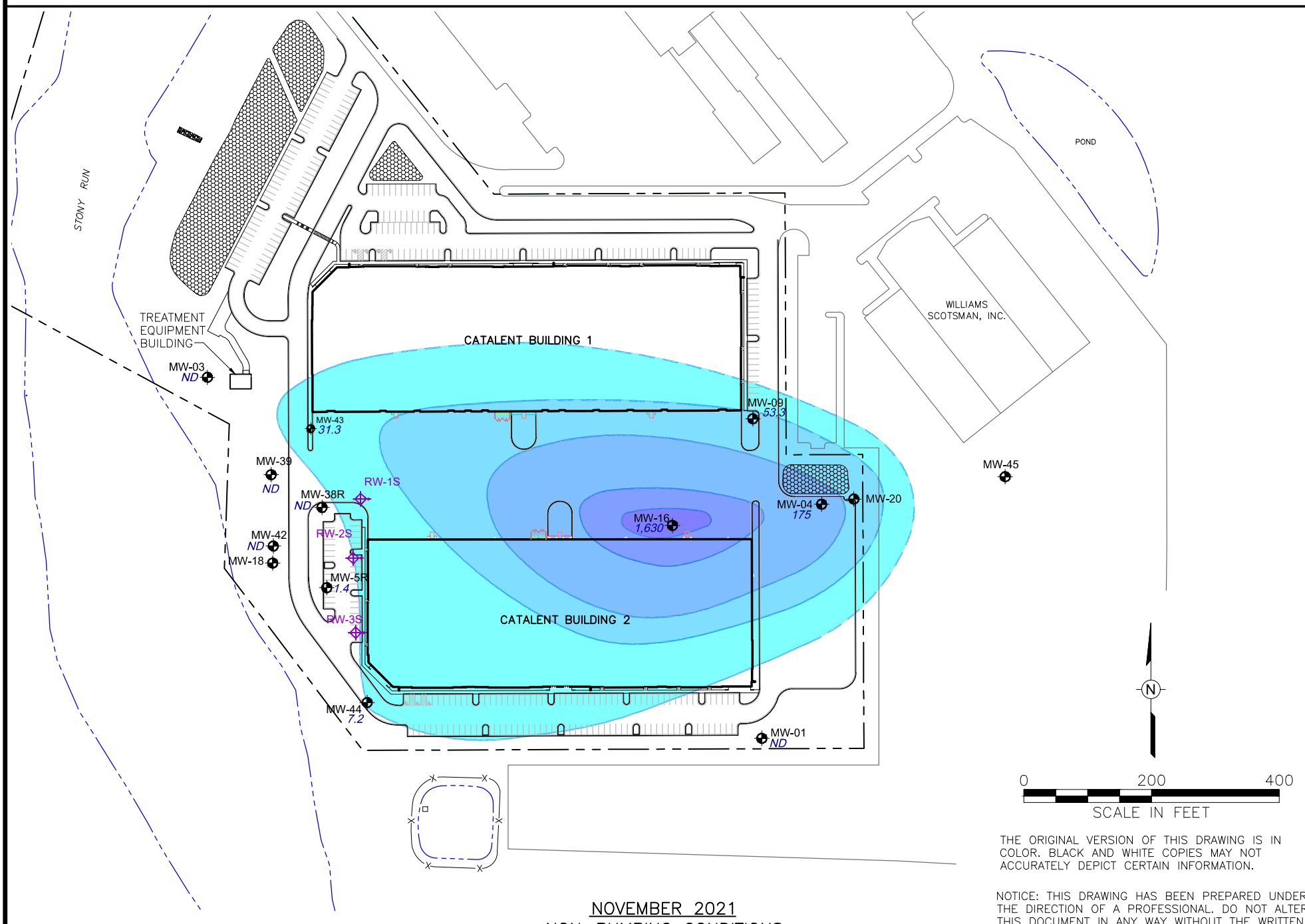


DECEMBER 2016
PRE-INSTALLATION OF THE HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM



NOVEMBER 2021
NON-PUMPING CONDITIONS

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SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

FIGURE 23

DISTRIBUTION OF 1,1-DCE FOR THE SHALLOW UNCONFINED PORTION OF THE LOWER PATAPSCO AQUIFER

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

Drawn By: EGC
Checked: MML 11/14/2022
Approved: RAG 11/23/2022
DWG Name: 314V5608.010-012

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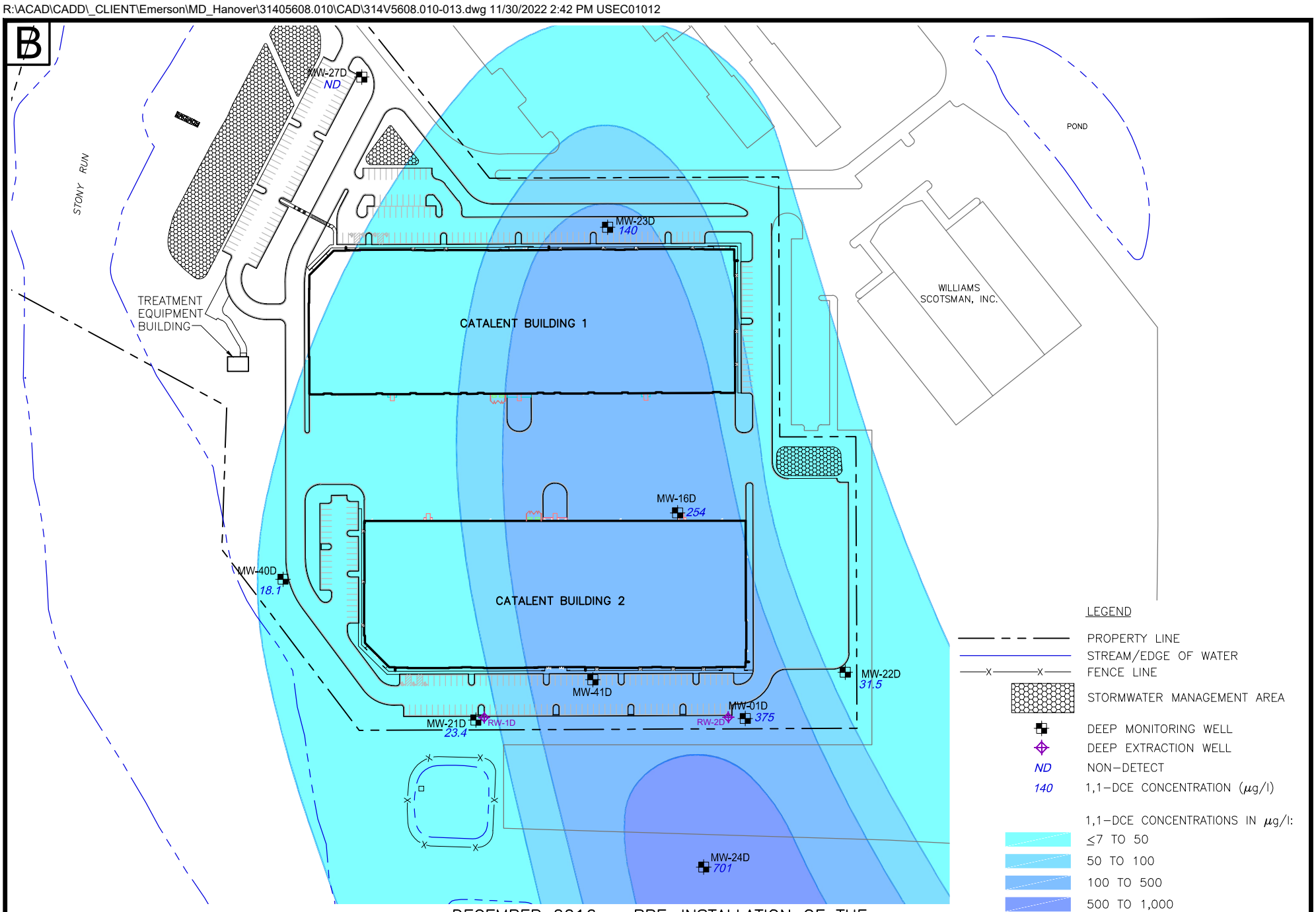
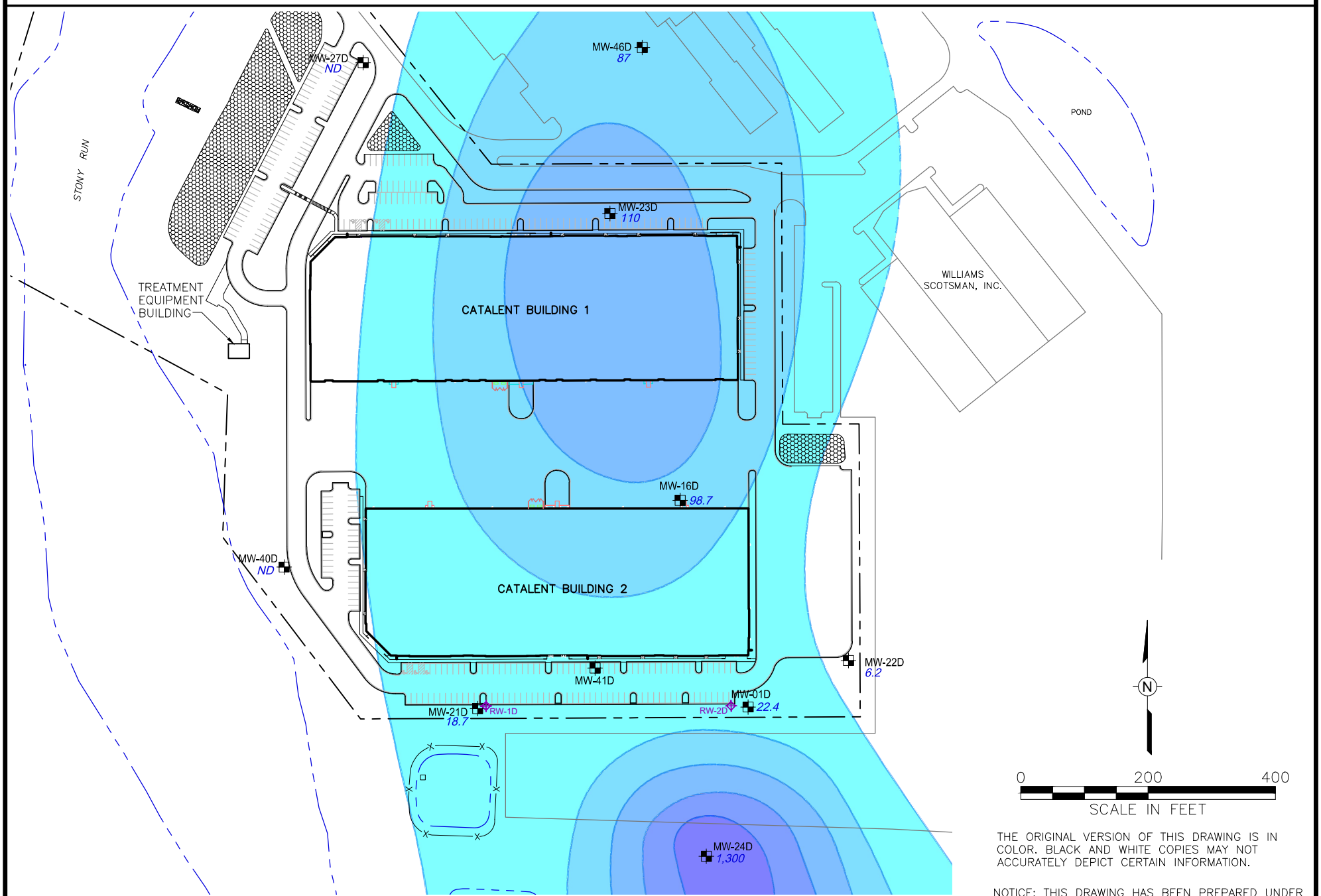


DECEMBER 2016 – PRE-INSTALLATION OF THE HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM



NOVEMBER 2021
NON-PUMPING CONDITIONS

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WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

FIGURE 24

DISTRIBUTION OF 1,1-DCE FOR THE DEEPER CONFINED PORTION OF THE LOWER PATAPSCO AQUIFER

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

Drawn By: EGC
Checked: MML 11/14/2022
Approved: RGJ 11/23/2022
DWG Name: 314V5608.010-013

TABLES

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 3/13/2017		Influent VSP-1 3/15/2017		Influent VSP-1 3/20/2017		Influent VSP-1 3/23/2017		Influent VSP-1 3/29/2017		Influent VSP-1 4/3/2017		Influent VSP-1 4/12/2017		Influent VSP-1 4/19/2017		Influent VSP-1 5/8/2017		Influent VSP-1 6/21/2017	
Volatile Organic Compounds (EPA Method 8260)																							
1,1,1-Trichloroethane	71-55-6	200	(c)	55		150		92		81		82		62		55		49		41		39	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**180**		**200**		**110**		**140**		**150**		**140**		**140**		**120**		**86**		**59**	
1,1-Dichloroethene	75-35-4	7	(c)	**260**		**360**		**260**		**360**		**360**		**390**		**380**		**410**		**350**		**310**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	1.6		2.0		2.5		3.1		3.5		3.6		3.5		3.0		2.6		2.1	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		25		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	1	U
2-Hexanone	591-78-6	--		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		10		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	1	U
Benzene	71-43-2	5		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.75		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	3.0		10		2.3		2.4		2.3		2.7		2.5		2.5		2.7		2.7	
Chloroform	67-66-3	80		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 3/13/2017		Influent VSP-1 3/15/2017		Influent VSP-1 3/20/2017		Influent VSP-1 3/23/2017		Influent VSP-1 3/29/2017		Influent VSP-1 4/3/2017		Influent VSP-1 4/12/2017		Influent VSP-1 4/19/2017		Influent VSP-1 5/8/2017		Influent VSP-1 6/21/2017	
Methyl-t-butyl ether	1634-04-4	20		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5		1	U	**10**		1	U	1	U	1.1		1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	1.9		**10**		2.2		2.8		2.8		3.0		3.0		2.9		2.6		2.2	
Trichlorofluoromethane	75-69-4	--		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2	(c)	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	2.2		10		1.2		1.8		1.9		2.5		2.6		2.2		1.9		1.4	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
TOTAL VOCs:		--		538.7		752		470.2		591.1		603.6		603.8		586.6		589.6		486.8		416.4	
Volatile Organic Compounds (EPA Method 8260 - SIM)																							
1,4-Dioxane	71-55-6	15	(c)	**250**		**440**		**360**		**330**		**340**		**330**		**290**		**270**		**220**		**190**	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 7/10/2017		Influent VSP-1 8/3/2017		Influent VSP-1 9/11/2017		Influent VSP-1 10/9/2017		Influent VSP-1 11/7/2017		Influent VSP-1 12/11/2017		Influent VSP-1 1/10/2018		Influent VSP-1 2/7/2018		Influent VSP-1 3/19/2018		Influent VSP-1 4/17/2018	
Volatile Organic Compounds (EPA Method 8260)																							
1,1,1-Trichloroethane	71-55-6	200	(c)	44		41		35		32		32		26		25		26		23		22	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**57**		**49**		**40**		**44**		**47**		**48**		**51**		**58**		**61**		**64**	
1,1-Dichloroethene	75-35-4	7	(c)	**250**		**230**		**240**		**200**		**240**		**250**		**270**		**260**		**290**		**320**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	2.1		2.0		1.7		1.6		1.8		1.8		2.0		2.4		2.3		2.3	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	591-78-6	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	2.3		1.8		1.7		2.6		2.6		4.2		4.0		4.1		4.6		5.8	
Chloroform	67-66-3	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 7/10/2017		Influent VSP-1 8/3/2017		Influent VSP-1 9/11/2017		Influent VSP-1 10/9/2017		Influent VSP-1 11/7/2017		Influent VSP-1 12/11/2017		Influent VSP-1 1/10/2018		Influent VSP-1 2/7/2018		Influent VSP-1 3/19/2018		Influent VSP-1 4/17/2018	
Methyl-t-butyl ether	1634-04-4	20		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	2.2		2.0		1.7		1.6		1.7		1.6		1.7		1.8		1.7		1.7	
Trichlorofluoromethane	75-69-4	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	1.3		1.3		1	U	1.2		1.3		1.6		1.7		2.0		2.2		2.3	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
TOTAL VOCs:		--		358.9		327.1		320.1		283.0		326.4		333.2		355.4		354.3		384.8		418.1	
Volatile Organic Compounds (EPA Method 8260 - SIM)																							
1,4-Dioxane	71-55-6	15	(c)	**170**		**170**		**160**		**160**		**150**		**150**		**180**		**170**		**150**		**150**	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 5/8/2018		Influent VSP-1 6/5/2018		Influent VSP-1 7/12/2018 (e)		Influent VSP-1 10/3/2018		Influent VSP-1 1/8/2019		Influent VSP-1 4/4/2019		Influent VSP-1 5/8/2019		Influent VSP-1 7/2/2019		Influent VSP-1 10/16/2019		Influent VSP-1 1/9/2020	
Volatile Organic Compounds (EPA Method 8260)																							
1,1,1-Trichloroethane	71-55-6	200	(c)	19		23		24		28		20		27		29		27		20		19	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**70**		**76**		**74**		**72**		**63**		**54**		**51**		**44**		**43**		**44**	
1,1-Dichloroethene	75-35-4	7	(c)	**310**		**310**		**320**		**330**		**330**		**240**		**260**		**230**		**240**		**220**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	2.5		2.6		2.4		2.7		2.2		2.0		1.8		1.7		1.5		1.5	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	591-78-6	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	7.3		7.2		7.8		6.1		5.7		4.5		4.0		3.9		4.0		3.5	
Chloroform	67-66-3	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 5/8/2018		Influent VSP-1 6/5/2018		Influent VSP-1 7/12/2018 (e)		Influent VSP-1 10/3/2018		Influent VSP-1 1/8/2019		Influent VSP-1 4/4/2019		Influent VSP-1 5/8/2019		Influent VSP-1 7/2/2019		Influent VSP-1 10/16/2019		Influent VSP-1 1/9/2020	
Methyl-t-butyl ether	1634-04-4	20		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	1	U	1	U	1	U	1	U	**1.6**		1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	1.7		1.9		1.8		1.9		1.6		1.6		1.6		1.5		1.2		1.2	
Trichlorofluoromethane	75-69-4	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	2.5		2.7		2.7		2.6		2.1		1.8		1.7		1.6		1.3		1.2	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
TOTAL VOCs:		--		413.0		423.4		432.7		443.3		424.6		332.5		349.1		309.7		311.0		290.4	
Volatile Organic Compounds (EPA Method 8260 - SIM)																							
1,4-Dioxane	71-55-6	15	(c)	**170**		**140**		**130**		**150**		**150**		**130**		**130**		**150**		**120**		**110**	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 4/7/2020		Influent VSP-1 7/30/2020		Influent VSP-1 11/12/2020		Influent VSP-1 1/13/2021		Influent VSP-1 4/27/2021		Influent VSP-1 9/21/2021		Influent VSP-1 11/3/2021	
Volatile Organic Compounds (EPA Method 8260)																	
1,1,1-Trichloroethane	71-55-6	200	(c)	21		24		19		16		16		15		15	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**45**		**49**		**47**		**41**		**40**		**35**		**39**	
1,1-Dichloroethene	75-35-4	7	(c)	**220**		**250**		**220**		**190**		**190**		**180**		**190**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	1.5		1.6		1.4		1.3		1.2		1.2		1.2	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone	591-78-6	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		5	U	5	U	5	U	5	U	5	U	5	U	5	U
Benzene	71-43-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	74-83-9	0.75		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	56-23-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	3.7		3.7		4.2		3.7		3.9		2.9		3.8	
Chloroform	67-66-3	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	124-48-1	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	1	U	1	U	1	U	1	U	1	U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)		Influent VSP-1 4/7/2020		Influent VSP-1 7/30/2020		Influent VSP-1 11/12/2020		Influent VSP-1 1/13/2021		Influent VSP-1 4/27/2021		Influent VSP-1 9/21/2021		Influent VSP-1 11/3/2021	
Methyl-t-butyl ether	1634-04-4	20		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	75-09-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	1.2		1.2		1.1		1.0		1	U	1.0		1	U
Trichlorofluoromethane	75-69-4	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	75-01-4	2	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	1.2		1.4		1.2		1.2		1.2		1.1		1.2	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U
TOTAL VOCs:		--		293.6		330.9		293.9		254.2		252.3		236.2		250.2	
Volatile Organic Compounds (EPA Method 8260 - SIM)																	
1,4-Dioxane	71-55-6	15	(c)	**260**		**110**		**110**		**130**		**91**		**87**		**99**	

Notes:

a/ MDE = Maryland Department of the Environment; EPA = US Environmental Protection Agency; VOC = volatile organic compound; SIM = Selected Ion Monitoring; U = not detected above the method detection limit; -- = no existing cleanup standard.
All concentrations are in micrograms per liter (µg/L).
Results shown in highlight and **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

c/ Numeric cleanup standards are equal to those in Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

d/ Numeric cleanup standards for 1,1-dichloroethane and chloroethane reflect the current standards promulgated by the State of Maryland in October 2018 and differ from those in Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

e/ Reduced influent monitoring frequency to quarterly effective July 2018.

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 03/13/2017		Effluent VSP-4 3/20/2017		Effluent VSP-4 3/29/2017		Effluent VSP-4 3/30/2017	Effluent VSP-4 4/3/2017		Effluent VSP-4 5/8/2017		Effluent VSP-4 6/21/2017		Effluent VSP-4 7/10/2017		Effluent VSP-4 8/3/2017		Effluent VSP-4 9/11/2017	
Volatile Organic Compounds (EPA Method 624)																							
1,1,1-Trichloroethane	µg/L	71-55-6			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1-Dichloroethane	µg/L	75-34-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1-Dichloroethene	µg/L	75-35-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichloroethane	µg/L	107-06-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichloropropane	µg/L	78-87-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Acrolein	µg/L	107-02-8			NA		NA		NA		NA	NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA	NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromodichloromethane	µg/L	75-27-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromoform	µg/L	75-25-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromomethane	µg/L	74-83-9			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Carbon Tetrachloride	µg/L	56-23-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chlorobenzene	µg/L	108-90-7			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloroethane	µg/L	75-00-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloroform	µg/L	67-66-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloromethane	µg/L	74-87-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dibromochloromethane	µg/L	124-48-1			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dichlorodifluoromethane	µg/L	75-71-8			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Ethylbenzene	µg/L	100-41-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Methylene Chloride	µg/L	75-09-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Tetrachloroethylene	µg/L	127-18-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Toluene	µg/L	108-88-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Trichloroethene	µg/L	79-01-6			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Trichlorofluoromethane	µg/L	75-69-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Vinyl Chloride	µg/L	75-01-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
TOTAL VOCs:					ND		ND		ND		NA	ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 03/13/2017		Effluent VSP-4 3/20/2017		Effluent VSP-4 3/29/2017		Effluent VSP-4 3/30/2017		Effluent VSP-4 4/3/2017		Effluent VSP-4 5/8/2017		Effluent VSP-4 6/21/2017		Effluent VSP-4 7/10/2017		Effluent VSP-4 8/3/2017		Effluent VSP-4 9/11/2017	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			28,600		3,650		3,400		NA		2,840		NA		3,440		NA		NA		NA	
Copper	µg/L	7440-50-8	13		1.0	U	1.0	U	1.0	U	NA		3.2		4.7		4.3		4.6		5.0		4.6	
Hardness (Ca & Mg)	mg/L	HARDCAMG			91		15		14		NA		12		15		14		14		15		16	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	NA		1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			4,690		1,470		1,260		NA		1,220		NA		1,400		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		1.5		29.9		2.6		NA		7.7		9.4		9.2		9.7		10.1		10.7	
Zinc	µg/L	7440-66-6	120		20	U	**179**		27.2		NA		24.7		20.2		20	U	23.7		22.8		48.9	
Dissolved Metals																								
Copper	µg/L	7440-50-8			1.0	U	1.0	U	1.0	U	NA		1.4		3.5		1.9		2.3		1.1		2.7	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			1.0	U	27.3		2.5		NA		8		9.3		9.3		9.3		1	U	9.7	
Zinc	µg/L	7440-66-6			20	U	163		20	U	NA		20	U	20	U	20	U	20	U	20	U	20	U
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	2.0	U	2.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			2.0	U	2.0	U	3.0	U	NA		2.0	U	2.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		7.29		6.88		6.84		NA		6.56		6.72		7.05		7.02		7.50		8.05	
Dissolved Oxygen	mg/L	-	≥ 5		7.08		8.14		10.65		NA		7.35		11.05		13.50		15.00		17.30		16.45	
Daily Flow Rate (b)	gpd	-			43,200		93,600		108,000		NA		103,680		102,240		102,816		99,216		92,880		92,736	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		5.71		NA		110.68		NA		98.67		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		0.02	U	NA		0.02	U	NA		0.2	U	NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		0.68		NA		0.91		NA		0.95		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		0.1	U	NA		0.1	U	NA		0.1	U	NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		0.4	U	NA		0.4	U	NA		0.4	U	NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		0.4	U	NA		0.4	U	NA		0.4	U	NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date / Permit Limits	Effluent VSP-4 10/9/2017		Effluent VSP-4 11/7/2017		Effluent VSP-4 12/11/2017		Effluent VSP-4 1/10/2018 (c)		Effluent VSP-4 2/7/2018		Effluent VSP-4 3/19/2018		Effluent VSP-4 4/17/2018		Effluent VSP-4 5/8/2018		Effluent VSP-4 6/5/2018		Effluent VSP-4 7/12/2018	
Volatile Organic Compounds (EPA Method 624)																							
1,1,1-Trichloroethane	µg/L	71-55-6		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Acrolein	µg/L	107-02-8		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:				ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 10/9/2017		Effluent VSP-4 11/7/2017		Effluent VSP-4 12/11/2017		Effluent VSP-4 1/10/2018 (c)		Effluent VSP-4 2/7/2018		Effluent VSP-4 3/19/2018		Effluent VSP-4 4/17/2018		Effluent VSP-4 5/8/2018		Effluent VSP-4 6/5/2018		Effluent VSP-4 7/12/2018	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		3,980		4,030		4,280		NA		NA		4,200	
Copper	µg/L	7440-50-8	13		4.6		1.0	U	4.0		4.2		4.0		4.9		2.1		1.3		2.4		5.0	
Hardness (Ca & Mg)	mg/L	HARDCAMG			15		16		16		18		16		17		18		18		16		17	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		1,560		1,620		1,810		NA		NA		1,650	
Nickel	µg/L	7440-02-0	470		10.6		10.8		10.7		11.1		11.2		11.4		8.4		13.2		11.6		12.6	
Zinc	µg/L	7440-66-6	120		24.6		21.2		20.6		28.6		22		26.9		28.4		24.5		32.4		27.9	
Dissolved Metals																								
Copper	µg/L	7440-50-8			3.2		1.0	U	2.8		3.1		2.7		4.1		1.9		1.2		1.4		3.4	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			10.3		10.6		10.1	U	11.7		10.8		12.3		8.1		12.3		10.0		11.6	
Zinc	µg/L	7440-66-6			20	U	20	U	20	U	20.7		20	U	23.8		20	U	20.6		20.0	U	21.2	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	2.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		7.41		6.60		7.80		7.48		7.60		7.48		7.99		7.61		7.53		7.74	
Dissolved Oxygen	mg/L	-	≥ 5		17.60		18.65		17.79		15.60		15.93		15.22		12.13		13.30		12.63		11.76	
Daily Flow Rate (b)	gpd	-			82,878		86,809		95,592		97,690		97,015		88,665		90,352		94,346		97,707		96,390	
Nitrogen																								
Nitrogen, Total	lbs/qtr				93.24		NA		NA		130.22		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			0.2	U	NA		NA		0.2	U	NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			0.92		NA		NA		1.4		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			0.1	U	NA		NA		0.1	U	NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			0.4	U	NA		NA		0.4	U	NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			0.4	U	NA		NA		0.4	U	NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date / Permit Limits	Effluent VSP-4 8/8/2018		Effluent VSP-4 9/6/2018		Effluent VSP-4 10/3/2018		Effluent VSP-4 11/6/2018		Effluent VSP-4 12/6/2018		Effluent VSP-4 1/8/2019		Effluent VSP-4 2/5/2019		Effluent VSP-4 3/7/2019		Effluent VSP-4 4/4/2019		Effluent VSP-4 5/8/2019	
Volatile Organic Compounds (EPA Method 624)																							
1,1,1-Trichloroethane	µg/L	71-55-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA	
Acrolein	µg/L	107-02-8		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:				ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 8/8/2018		Effluent VSP-4 9/6/2018		Effluent VSP-4 10/3/2018		Effluent VSP-4 11/6/2018		Effluent VSP-4 12/6/2018		Effluent VSP-4 1/8/2019		Effluent VSP-4 2/5/2019		Effluent VSP-4 3/7/2019		Effluent VSP-4 4/4/2019		Effluent VSP-4 5/8/2019	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			4,170		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		4.0		3.8		4.2		2.1		2.9		1.0	U	1.7		3.7		3.9		4.3	
Hardness (Ca & Mg)	mg/L	HARDCAMG			17		18		17		18		18		19		18		17		16		18	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			1,690		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		12.1		12.0		12.0		13.3		13		16.6		13.6		12.6		11.6		13.2	
Zinc	µg/L	7440-66-6	120		25.8		26.0		31.8		20	U	23.4		26.5		27.5		25.8		22.4		25.1	
Dissolved Metals																								
Copper	µg/L	7440-50-8			2.6		2.2		2.8		1.2		2.3		1.0	U	1.0	U	3.2		3.2		3.5	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			11.6		10.9		11.6		11.6		12.1		14		13.2		11.3		13.3		12.4	
Zinc	µg/L	7440-66-6			51.6		20	U	28.4		20	U	20	U	20.5		20.7		20	U	20	U	20	U
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			2.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		6.94		8.05		6.80		6.81		6.97		6.85		6.75		7.20		7.15		6.72	
Dissolved Oxygen	mg/L	-	≥ 5		12.45		13.12		8.50		10.33		12.15		8.82		8.85		7.51		7.17		7.28	
Daily Flow Rate (b)	gpd	-			85,875		96,894		93,553		77,496		87,236		92,672		97,420		98,934		104,205		101,014	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 6/12/2019		Effluent VSP-4 7/2/2019		Effluent VSP-4 8/1/2019		Effluent VSP-4 9/4/2019		Effluent VSP-4 10/16/2019		Effluent VSP-4 11/4/2019		Effluent VSP-4 12/2/2019		Effluent VSP-4 1/9/2020		Effluent VSP-4 2/4/2020		Effluent VSP-4 3/24/2020	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			3.4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					3.4		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 6/12/2019		Effluent VSP-4 7/2/2019		Effluent VSP-4 8/1/2019		Effluent VSP-4 9/4/2019		Effluent VSP-4 10/16/2019		Effluent VSP-4 11/4/2019		Effluent VSP-4 12/2/2019		Effluent VSP-4 1/9/2020		Effluent VSP-4 2/4/2020		Effluent VSP-4 3/24/2020	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		5		2.6		1.4		3.8		3.7		3.9		3.6		2.7		1.0	U	3.3	
Hardness (Ca & Mg)	mg/L	HARDCAMG			21		19		17		20		18		17		14		20		13.0		17	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		13.9		8.9		8.9		13.8		13.0		13.0		12.3		13.1		4.5		9.2	
Zinc	µg/L	7440-66-6	120		29.5		39.4		22.2		25.2		28.9		28.0		26.8		25.3		20.0	U	23.2	
Dissolved Metals																								
Copper	µg/L	7440-50-8			3.4		2.0		1.0	U	1.6		1.6		1.5		1.1		3.6		1.0	U	3.2	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			12.6		9.0		8.8		13.0		12.5		12.6		11.8		13.3		1.5		11.6	
Zinc	µg/L	7440-66-6			20.3		20	U	20	U	20.1		20.9		28.8		20	U	22.4		20.0	U	22.4	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		6.55		6.52		7.01		6.79		6.99		6.99		7.06		6.55		8.14		6.63	
Dissolved Oxygen	mg/L	-	≥ 5		9.86		7.78		7.76		5.75		8.30		6.94		8.46		8.16		8.13		6.95	
Daily Flow Rate (b)	gpd	-			95,834		98,658		93,473		74,748		69,097		96,262		79,991		77,418		85,908		43,238	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date / Permit Limits	Effluent VSP-4 4/7/2020		Effluent VSP-4 5/28/2020		Effluent VSP-4 6/29/2020		Effluent VSP-4 7/30/2020		Effluent VSP-4 8/26/2020		Effluent VSP-4 9/28/2020		Effluent VSP-4 10/26/2020		Effluent VSP-4 11/12/2020		Effluent VSP-4 12/3/2020		Effluent VSP-4 1/13/2021	
Volatile Organic Compounds (EPA Method 624)																							
1,1,1-Trichloroethane	µg/L	71-55-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrolein	µg/L	107-02-8		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:				ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 4/7/2020		Effluent VSP-4 5/28/2020		Effluent VSP-4 6/29/2020		Effluent VSP-4 7/30/2020		Effluent VSP-4 8/26/2020		Effluent VSP-4 9/28/2020		Effluent VSP-4 10/26/2020		Effluent VSP-4 11/12/2020		Effluent VSP-4 12/3/2020		Effluent VSP-4 1/13/2021	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		1.8		2.6		5.5		2.7		5.0		6.2		6.7		2.2		2.7		6.2	
Hardness (Ca & Mg)	mg/L	HARDCAMG			20		18		19		25		15		20		18		14		24		44	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		14.3		15.8		14.5		17.0		13.8		16.3		20.0		16.6		17.7		14.5	
Zinc	µg/L	7440-66-6	120		32.1		32.4		29.1		33.6		27.6		28.1		32.6		31.3		27.5		27.1	
Dissolved Metals																								
Copper	µg/L	7440-50-8			1.3		1.2		1.0	U	1.6		3.0		3.8		3.3		1.3		1.3		3.4	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			13.8		14.9		14.8		15.0		14.3		15.6		15.0		15.7		17.2		13.6	
Zinc	µg/L	7440-66-6			25.1		23.4		24.3		28.6		25.9		23.2		21.5		21.4		22.7		20.2	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		6.76		7.01		6.82		7.23		7.20		6.98		7.63		6.96		7.67		7.58	
Dissolved Oxygen	mg/L	-	≥ 5		8.44		8.34		8.72		7.85		8.32		7.92		8.30		9.15		9.01		8.41	
Daily Flow Rate (b)	gpd	-			77,089		58,459		59,217		73,109		88,076		57,272		90,297		98,368		100,433		101,699	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 2/9/2021		Effluent VSP-4 3/18/2021		Effluent VSP-4 4/27/2021		Effluent VSP-4 5/27/2021		Effluent VSP-4 6/24/2021		Effluent VSP-4 7/29/2021		Effluent VSP-4 8/31/2021		Effluent VSP-4 9/21/2021		Effluent VSP-4 10/7/2021		Effluent VSP-4 11/3/2021	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		NA		NA		NA		NA		NA		NA		NA		1.0	U	1.0	U
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		5.0	U	5.0	U
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		5.0	U	5.0	U
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 2/9/2021		Effluent VSP-4 3/18/2021		Effluent VSP-4 4/27/2021		Effluent VSP-4 5/27/2021		Effluent VSP-4 6/24/2021		Effluent VSP-4 7/29/2021		Effluent VSP-4 8/31/2021		Effluent VSP-4 9/21/2021		Effluent VSP-4 10/7/2021		Effluent VSP-4 11/3/2021	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		4.7		3.5		3.0		2.3		1.0	U	2.7		5.9		3.2		1.0	U	7.3	
Hardness (Ca & Mg)	mg/L	HARDCAMG			21		23		21		20		20		7.4		19		25		24		23	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		8.2		21.0		19.7		10.7		8.6		13.9		21.3		14.2		3.4		**995**	
Zinc	µg/L	7440-66-6	120		20.8		26.9		30.1		26.3		22.2		88.2		34.9		31.4		54.2		33.4	
Dissolved Metals																								
Copper	µg/L	7440-50-8			1.4		1.9		1.8		1.6		1.0	U	1.9		3.0		2.7		1.0	U	3.7	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			7.9		18.9		18.4		9.2		8.4		14.0		17.5		13.4		3.0		16.1	
Zinc	µg/L	7440-66-6			20	U	23.1		30.9		23.2		20	U	84.7		23.0		30.5		41.6		28.2	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.1		1.0	U	1.7		1.0	U	2.0		1.0	U	1.0	U	1.8		1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		7.76		8.03		7.70		7.32		7.81		7.45		7.56		7.41		7.70		6.90	
Dissolved Oxygen	mg/L	-	≥ 5		7.80		8.11		7.52		7.88		7.89		7.20		10.88		8.76		11.25		14.33	
Daily Flow Rate (b)	gpd	-			92,706		103,848		104,287		92,458		53,993		11,266		4,680		59,040		78,445		23,608	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

			Sample ID	Effluent VSP-4	Effluent VSP-4	
			Date	11/19/2021	12/29/2021	
Analyte Name	**Units**	**Cas#**	**Permit Limits**			
Volatile Organic Compounds (EPA Method 624)						
1,1,1-Trichloroethane	µg/L	71-55-6		NA	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		NA	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		NA	1.0	U
1,1-Dichloroethane	µg/L	75-34-3		NA	1.0	U
1,1-Dichloroethene	µg/L	75-35-4		NA	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		NA	1.0	U
1,2-Dichloroethane	µg/L	107-06-2		NA	1.0	U
1,2-Dichloropropane	µg/L	78-87-5		NA	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		NA	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		NA	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		NA	1.0	U
Acrolein	µg/L	107-02-8		NA	5.0	U
Acrylonitrile	µg/L	107-13-1		NA	5.0	U
Benzene	µg/L	71-43-2		NA	1.0	U
Bromodichloromethane	µg/L	75-27-4		NA	1.0	U
Bromoform	µg/L	75-25-2		NA	1.0	U
Bromomethane	µg/L	74-83-9		NA	1.0	U
Carbon Tetrachloride	µg/L	56-23-5		NA	1.0	U
Chlorobenzene	µg/L	108-90-7		NA	1.0	U
Chloroethane	µg/L	75-00-3		NA	1.0	U
Chloroform	µg/L	67-66-3		NA	1.0	U
Chloromethane	µg/L	74-87-3		NA	1.0	U
Dibromochloromethane	µg/L	124-48-1		NA	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		NA	1.0	U
Ethylbenzene	µg/L	100-41-4		NA	1.0	U
Methylene Chloride	µg/L	75-09-2		NA	1.0	U
Tetrachloroethylene	µg/L	127-18-4		NA	1.0	U
Toluene	µg/L	108-88-3		NA	1.0	U
Trichloroethene	µg/L	79-01-6		NA	1.0	U
Trichlorofluoromethane	µg/L	75-69-4		NA	1.0	U
Vinyl Chloride	µg/L	75-01-4		NA	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		NA	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		NA	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		NA	1.0	U
TOTAL VOCs:				NA	ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID Date	Effluent VSP-4 11/19/2021	Effluent VSP-4 12/29/2021	
Total Metals and Hardness (EPA Method 200.8)							
Calcium	µg/L	7440-70-2			NA	NA	
Copper	µg/L	7440-50-8	13		NA	4.2	
Hardness (Ca & Mg)	mg/L	HARDCAMG			NA	21	
Lead	µg/L	7439-92-1	65		NA	1.0	U
Magnesium	µg/L	7439-95-4			NA	NA	
Nickel	µg/L	7440-02-0	470		24.4	16.6	
Zinc	µg/L	7440-66-6	120		NA	28.0	
Dissolved Metals							
Copper	µg/L	7440-50-8			NA	2.0	
Lead	µg/L	7439-92-1			NA	1.0	U
Nickel	µg/L	7440-02-0			16.2	13.4	
Zinc	µg/L	7440-66-6			NA	20	U
Total Suspended Solids (SM 2540D)							
Total Suspended Solids	mg/L	TSS			NA	1.0	U
Biological Oxygen Demand (SM 5210B)							
Biological Oxygen Demand, 5 Day	mg/L	BOD5			NA	5.0	U
Field Parameters							
pH	SU	-	6.5 - 8.5		NA	7.46	
Dissolved Oxygen	mg/L	-	≥ 5		NA	11.37	
Daily Flow Rate (b)	gpd	-			NA	15,039	
Nitrogen							
Nitrogen, Total	lbs/qtr				NA	NA	
Ammonia (as N)	mg/L	7664-41-7			NA	NA	
Nitrate (as N)	mg/L	7727-37-9			NA	NA	
Nitrite (as N)	mg/L	7727-37-9			NA	NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA	NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA	NA	

Notes:
a/ EPA = US Environmental Protection Agency; SM = Standard Method; VOC = volatile organic compound; µg/L = micrograms per liter; mg/L = milligrams per liter; U = not detected above the method detection limit; ND = non-detected sum; NA = compound not analyzed; SU = Standard Units; gpd = gallons per day; lbs/qtr = pounds per quarter; N = Nitrogen.
Results shown in highlight and **bold** exceed the NPDES Permit limit.
b/ Daily Flow Rate determined by average of gallons processed per day per monitoring window.
c/ Nitrogen parameters no longer analyzed after the first quarter 2018 per Maryland Department of the Environment correspondence dated March 30, 2018.

Table 3

Historical Effluent Results - 1,4-Dioxane
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 03/13/2017 (c)	Effluent VSP-4 03/14/2017	Effluent VSP-4 3/15/2017	Effluent VSP-4 3/20/2017 (c)	Effluent VSP-4 3/23/2017	Effluent VSP-4 4/3/2017 (c)	Effluent VSP-4 4/12/2017	Effluent VSP-4 4/19/2017
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 5/8/2017 (c)	Effluent VSP-4 6/21/2017 (c)	Effluent VSP-4 7/10/2017 (c)	Effluent VSP-4 8/3/2017 (c)	Effluent VSP-4 9/11/2017 (c)	Effluent VSP-4 10/09/2017 (c)	Effluent VSP-4 10/12/2017	Effluent VSP-4 10/23/2017
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 10/26/2017	Effluent VSP-4 11/7/2017 (c)	Effluent VSP-4 12/11/2017 (c)	Effluent VSP-4 1/10/2018 (c)	Effluent VSP-4 2/07/2018 (c)	Effluent VSP-4 3/19/2018 (c)	Effluent VSP-4 4/17/2018 (c)	Effluent VSP-4 5/8/2018 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	1.0 U	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 6/5/2018 (c)	Effluent VSP-4 7/12/2018 (c)	Effluent VSP-4 8/8/2018 (c)	Effluent VSP-4 9/6/2018 (c)	Effluent VSP-4 9/10/2018	Effluent VSP-4 9/17/2018	Effluent VSP-4 9/17/2018	Effluent VSP-4 10/3/2018 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.9	1.6	1.7	4.6	4.8	3.8	1.7

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 11/6/2018 (c)	Effluent VSP-4 11/30/2018	Effluent VSP-4 12/6/2018 (c)	Effluent VSP-4 12/12/2018	Effluent VSP-4 1/8/2019 (c)	Effluent VSP-4 2/5/2019 (c)	Effluent VSP-4 3/7/2019 (c)	Effluent VSP-4 4/2/2019
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.1	2.9	1.3	1.6	11.0	1.7

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 4/4/2019 (c)	Effluent VSP-4 5/8/2019 (c)	Effluent VSP-4 6/12/2019 (c)	Effluent VSP-4 7/2/2019 (c)	Effluent VSP-4 8/1/2019 (c)	Effluent VSP-4 9/4/2019 (c)	Effluent VSP-4 10/16/2019 (c)	Effluent VSP-4 11/4/2019 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	10.0	5.6	**37**	1.0 U	1.0 U	7.0	7.6	12.0

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 12/2/2019 (c)	Effluent VSP-4 1/9/2020 (c)	Effluent VSP-4 2/4/2020 (c)	Effluent VSP-4 3/24/2020 (c)	Effluent VSP-4 4/7/2020 (c)	Effluent VSP-4 5/28/2020 (c)	Effluent VSP-4 6/29/2020 (c)	Effluent VSP-4 7/30/2020 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	12.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.7	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 8/26/2020 (c)	Effluent VSP-4 9/28/2020 (c)	Effluent VSP-4 10/26/2020 (c)	Effluent VSP-4 11/12/2020 (c)	Effluent VSP-4 12/3/2020 (c)	Effluent VSP-4 12/15/2020	Effluent VSP-4 1/13/2021 (c)	Effluent VSP-4 2/9/2021 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	6.3	2.0	**43**	2.0	2.2	13.0	1.1

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 3/18/2021 (c)	Effluent VSP-4 4/27/2021 (c)	Effluent VSP-4 5/27/2021 (c)	Effluent VSP-4 6/24/2021 (c)	Effluent VSP-4 7/29/2021 (c)	Effluent VSP-4 8/31/2021 (c)	Effluent VSP-4 9/21/2021 (c)	Effluent VSP-4 10/7/2021 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.5	1.2	1.0 U	1.0 U	8.3	1.0 U	1.0 U	1.0 U

Table 3

Historical Effluent Results - 1,4-Dioxane
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 11/3/2021 (c)	Effluent VSP-4 12/29/2021 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)				
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U

Notes:
a/ EPA = US Environmental Protection Agency; SIM = Selected Ion Monitoring; U = not detected above the method detection limit.
All concentrations are in micrograms per liter (µg/L).
Results shown in highlight and **bold** exceed the cleanup goal.
b/ Numeric cleanup standard from Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.
c/ VOCs were analyzed by Method 624 to fulfill the NPDES Permit requirement. See Table 2 for results.

Table 4

Summary of System Discharge and Mass Removal
Former Kop-Flex Facility
Hanover, Maryland (a)

Year	Month	Total Discharged Volume Gals	Water Flow Rate (b) GPM AVG	Estimated VOCs Removed Mass lbs	Estimated VOCs Removed Volume Gals	Estimated 1,4-Dioxane Removed Mass lbs	Estimated 1,4-Dioxane Removed Volume Gals
2017	*Total*	*26,606,357*	*61.3*	*86.6*	*8.6*	*43.1*	*5.0*
2018	*Total*	*33,439,140*	*67.3*	*111.3*	*11.1*	*41.5*	*4.8*
2019	*Total*	*33,566,025*	*69.8*	*95.4*	*9.5*	*36.3*	*4.2*
2020	*Total*	*27,711,625*	*70.5*	*68.1*	*6.8*	*31.5*	*3.7*
2021	January	3,152,673	70.6	6.50	0.65	3.08	0.36
	February	2,595,759	71.4	5.35	0.53	2.79	0.32
	March	3,219,276	72.1	6.64	0.66	3.45	0.40
	April	3,128,600	72.4	6.42	0.64	2.34	0.27
	May	2,866,205	71.2	5.88	0.58	2.18	0.25
	June	1,619,790	67.8	3.33	0.33	1.23	0.14
	July	349,231	39.4	0.67	0.07	0.23	0.03
	August	145,079	47.7	0.28	0.03	0.11	0.01
	September	1,771,202	67.3	3.40	0.34	1.29	0.15
	October	2,431,810	67.1	4.95	0.49	2.01	0.23
	November	708,245	67.7	1.44	0.14	0.59	0.07
	December	466,206	69.2	0.95	0.09	0.39	0.04
2021	*Total*	*22,454,076*	*69.7*	*45.8*	*4.5*	*19.7*	*2.3*
Historical Average (c)		***30,330,787***	***67.2***	***90.3***	***9.0***	***38.1***	***4.4***
Cumulative		**143,777,223**	**--**	**407.2**	**40.4**	**172.1**	**20.0**

Notes:
a/ GPM = gallons per minute; AVG = average; lbs = pounds; gals = gallons.
b/ Average water flow rate in GPM is based on fully operational days only.
Flow rates from July and August 2021 were not used in the calculation of the total average flow rate for 2021 as the System was nonoperational for the majority of both months and RW-1D was not pumping during the limited operation.
c/ Historical averages calculated using values from 2017 through 2020.

Table 5

Summary of Recovery Well Flow Rates
Former Kop-Flex Facility
Hanover, Maryland (a)

Year	Month	Average Recovery Well Flow Rates					
		RW-1S	RW-2S	RW-3S	RW-1D	RW-2D	Total
2018	*Total*	*4.5*	*1.8*	*2.4*	*28.4*	*28.7*	*65.8*
2019	*Total*	*4.9*	*1.7*	*1.4*	*28.5*	*29.3*	*65.8*
2020	*Total*	*4.2*	*2.0*	*1.8*	*21.7*	*24.4*	*54.1*
2021	January	5.2	2.7	2.6	30.5	30.7	*71.7*
	February	4.5	2.5	2.4	28.1	28.4	*65.9*
	March	4.7	2.7	2.7	31.3	31.4	*72.7*
	April	4.4	2.6	2.7	31.9	31.4	*73.0*
	May	4.3	2.4	2.4	24.9	28.8	*62.9*
	June	2.8	1.5	1.5	15.0	16.9	*37.6*
	July	0.4	0.2	0.2	0.6	2.6	*4.0*
	August	0.1	0.1	0.1	0.2	0.9	*1.3*
	September	3.4	1.7	1.5	15.4	19.5	*41.4*
	October	4.9	2.4	2.6	28.2	28.4	*66.5*
	November	1.2	0.6	0.5	6.7	6.6	*15.6*
	December	0.6	0.3	0.3	3.9	4.0	*9.2*
2021	*Total*	*3.0*	*1.6*	*1.6*	*18.1*	*19.1*	*43.5*
Historical Average (b)		***4.5***	***1.8***	***1.9***	***26.2***	***27.5***	***61.9***

Notes:
a/ Flow rates are listed in gallons per minute (GPM).
b/ Historical averages calculated using values from 2018 through 2020.

Table 6

Summary of Recovery Well Volumes
Former Kop-Flex Facility
Hanover, Maryland (a)

Year	Month	Summary of Recovery Well Total Volumes by Month					
		RW-1S	**RW-2S**	**RW-3S**	**RW-1D**	**RW-2D**	**Total**
2017	*Total*	*1.66*	*1.32*	*1.01*	*10.63*	*12.22*	*26.82*
2018	*Total*	*2.35*	*0.94*	*1.26*	*14.94*	*15.10*	*34.59*
2019	*Total*	*2.49*	*0.89*	*0.72*	*14.61*	*15.05*	*33.76*
2020	*Total*	*2.21*	*1.04*	*0.93*	*11.33*	*12.85*	*28.37*
2021	January	0.22	0.12	0.11	1.32	1.33	3.10
	February	0.20	0.11	0.11	1.26	1.27	2.94
	March	0.19	0.11	0.11	1.26	1.27	2.93
	April	0.20	0.12	0.12	1.47	1.45	3.37
	May	0.21	0.11	0.12	1.18	1.37	2.99
	June	0.12	0.06	0.07	0.65	0.73	1.62
	July	0.04	0.02	0.02	0.05	0.23	0.35
	August	0.01	0.01	0.01	0.02	0.08	0.12
	September	0.21	0.11	0.09	0.97	1.24	2.62
	October	0.12	0.06	0.06	0.69	0.69	1.63
	November	0.05	0.02	0.02	0.29	0.29	0.67
	December	0.03	0.01	0.01	0.17	0.17	0.40
2021	*Total*	*1.60*	*0.86*	*0.85*	*9.33*	*10.10*	*22.74*
Percentage of Total 2021 Flow		7%	4%	4%	41%	44%	--
Historical Average (b)		***2.18***	***1.05***	***0.98***	***12.88***	***13.81***	***30.89***
Cumulative		**10.31**	**5.05**	**4.77**	**60.84**	**65.32**	**146.29**

Notes:
a/ Volumes of water are listed in millions of gallons.
b/ Historical averages calculated using values from 2017 through 2020.

Table 7

2021 Recovery Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

		Shallow Wells						Deep Wells			
	Well ID:	**RW-1S**		**RW-2S**		**RW-3S**		**RW-1D**		**RW-2D**	
	Date Sampled:	**5/9/21**	**12/29/21**	**5/9/21**	**12/29/21**	**5/9/21**	**12/29/21**	**5/9/21**	**12/29/21**	**5/9/21**	**12/29/21**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**										
VOCs											
Chloroethane	2,100	15.0	13.2	2.0 U	2.0 U	1.0 U	1.0 U	5.9	5.8	1.0 U	1.0 U
1,1-Dichloroethane	2.8	**113**	**99.4**	**32.4**	**32.7**	2.7	2.3	**52.4**	**51.4**	**16.8**	**20.2**
1,2-Dichloroethane	5	2.5 U	2.5 U	2.0 U	2.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.1	1.1
1,1-Dichloroethene	7	**389**	**368**	**184**	**184**	4.2	3.2	**204**	**202**	**104**	**120**
cis-1,2-Dichloroethene	70	2.9	2.5 U	2.0 U	2.0 U	1.0 U	1.0 U	2.3	2.0 U	1.0 U	1.0 U
1,4-Dioxane	15 (c)	**291**	**294**	**153**	**207**	13.2	11.1	**77.7**	**83.7**	**62.8**	**85.1**
1,1,1-Trichloroethane	200	72.5	49.2	**221**	147	8.1	5.2	5.5	4.5	4.2	4.0
Trichloroethene	5	2.9	2.5 U	2.1	2.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Vinyl chloride	2	**4.2**	**3.8**	2.0 U	2.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U

Notes:

a/ VOC = volatile organic compound; U = not detected above the method detection limit.
Only detected VOC concentrations are provided.
All concentrations are in micrograms per liter (µg/L).
Results shown in **bold** exceed the cleanup goal.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryla
Interim Final Guidance (October 2018). Accessed May 27, 2020:
https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/
MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

c/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

Table 8

Historical Groundwater Sample Results - Recovery Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
Groundwater Quality Standard (c)			**2.8**	**7**	**15 (d)**
RW-1S	**Shallow**	*12/7/2016*	**468**	**957**	**1,420**
		5/1/2017	**711**	**1,210**	**1,370**
		8/31/2017	**192**	**434**	**586**
		11/14/2017	**196**	**544**	**580**
		5/30/2018	**93**	**381**	**377**
		11/7/2018	**105**	**458**	**467**
		5/21/2019	**89.1**	**384**	**374**
		11/19/2019	**77.4**	**348**	**299**
		5/13/2020	**98.2**	**447**	**298**
		11/22/2020	**81.2**	**344**	**351**
		5/9/2021	**113**	**389**	**291**
		12/29/2021	**99.4**	**368**	**294**
RW-2S	**Shallow**	*12/6/2016*	**198**	**971**	**1,190**
		5/1/2017	**95.7**	**622**	**949**
		8/31/2017	**71.7**	**390**	**482**
		11/14/2017	**83.5**	**401**	**549**
		5/30/2018	**33.0**	**203**	**200**
		11/7/2018	**29.1**	**177**	**200**
		5/21/2019	**36.5**	**244**	**448**
		11/19/2019	**22.4**	**132**	**111**
		5/13/2020	**24.9**	**140**	**99.8**
		11/22/2020	**18.6**	**129**	**97.0**
		5/9/2021	**32.4**	**184**	**153**
		12/29/2021	**32.7**	**184**	**207**
RW-3S	**Shallow**	*12/6/2016*	**4.6**	**7.2**	5.9
		5/1/2017	1.0 U	1.2	3.8
		8/31/2017	1.0 U	1.7	5.9
		11/14/2017	1.8	1.8	10.6
		5/30/2018	1.9	2.6	10.4
		11/7/2018	2.1	2.6	12.4
		5/21/2019	2.1	2.7	**15.2**
		11/19/2019	**2.9**	4.7	**16.6**
		5/12/2020	**3.4**	5.9	**17.2**
		11/22/2020	**2.8**	4.2	13.8
		5/9/2021	2.7	4.2	13.2
		12/29/2021	2.3	3.2	11.1

Table 8

Historical Groundwater Sample Results - Recovery Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
Groundwater Quality Standard (c)			**2.8**	**7**	**15 (d)**
RW-1D	**Deep**	*12/6/2016*	**4.4**	**39.3**	**34.4**
		5/1/2017	**10.4**	**88.9**	**51.9**
		8/31/2017	**15.7**	**99.7**	**52.8**
		11/14/2017	**30.4**	**174**	**65.5**
		5/30/2018	**77.1**	**392**	**139**
		11/7/2018	**78.1**	**363**	**155**
		5/21/2019	**50.8**	**224**	**112**
		11/19/2019	**49.9**	**240**	**89.7**
		5/12/2020	**48.4**	**202**	**81.8**
		11/22/2020	**42.0**	**179**	**90.9**
		5/9/2021	**52.4**	**204**	**77.7**
		12/29/2021	**51.4**	**202**	**83.7**
RW-2D	**Deep**	*12/6/2016*	**64.0**	**257**	**206**
		5/1/2017	**56.6**	**486**	**214**
		8/31/2017	**42.4**	**306**	**149**
		11/14/2017	**44.0**	**295**	**172**
		5/30/2018	**24.9**	**175**	**106**
		11/7/2018	**25.4**	**185**	**99.8**
		5/21/2019	**16.9**	**115**	**72.7**
		11/19/2019	**21.6**	**149**	**85.5**
		5/12/2020	**21.4**	**145**	**78.2**
		11/22/2020	**17.9**	**131**	**74.5**
		5/9/2021	**16.8**	**104**	**62.8**
		12/29/2021	**20.2**	**120**	**85.1**

a/ Select constituents are presented above, see Appendix B for complete analytical data.

b/ VOCs = volatile organic compounds; µg/l = micrograms per liter; 1,1-DCA = 1,1-dichloroethane; 1,1-DCE = 1,1-dichloroethene; U = compound not detected above reported limit.
Bolded concentrations are greater than the Groundwater Quality Standards.

c/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

d/ Numeric cleanup standards from WSP's October 2, 2015, Response Action Plan, Revision 2.

Table 9

Organic Matter Pre-Treatment Evaluation
Ion Exchange Test Column Analytical Results
Former Kop-Flex Facility Site
Hanover, Maryland (a)

		Week 1						Week 2					
	Date:	**4/12/2021**		**4/14/2021**		**4/16/2021**		**4/19/2021**		**4/21/2021**		**4/23/2021**	
	Totalizer (gal, b):	**3.0**		**314.7**		**649.5**		**1,110.4**		**1,400.2**		**1,706.6**	
	Sample location:	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**
Parameters													
TOC (mg/L)		0.82	0.50 U	0.91	0.85	0.83	0.73	0.94	0.76	0.72	0.68	0.75	0.72
Tannins & lignins (mg/L)		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,4-Dioxane (µg/L)		79	75	--	--	--	--	87	86	--	--	--	--
VOCs (µg/L)													
1,1,1-Trichloroethane		20	21	--	--	--	--	110	69	--	--	--	--
1,1,2-Trichloroethane		0.20 U	0.20 U	--	--	--	--	0.70	0.63	--	--	--	--
1,1-Dichloroethane		36	38	--	--	--	--	290	220	--	--	--	--
1,1-Dichloroethene		210	210	--	--	--	--	1,100	540	--	--	--	--
1,2-Dichloroethane		1.6	1.6	--	--	--	--	7.2	6.8	--	--	--	--
2-Butanone		3.2	17	--	--	--	--	0.30 U	3.9	--	--	--	--
Acetone		0.70 U	11	--	--	--	--	0.70 U	0.70 U	--	--	--	--
Chloroethane		3.4	3.9	--	--	--	--	48	32	--	--	--	--
Chloroform		0.20 U	0.20 U	--	--	--	--	1.6	1.0	--	--	--	--
cis-1,2-Dichloroethene		0.92	1.1	--	--	--	--	11	6.9	--	--	--	--
Methyl tertiary butyl ether		0.38	0.40	--	--	--	--	2.6	3.5	--	--	--	--
Methylene Chloride		0.30 U	0.30 U	--	--	--	--	3.5	2.9	--	--	--	--
Tetrachloroethene		0.20 U	0.20 U	--	--	--	--	0.32	0.23	--	--	--	--
Trichloroethene		0.69	0.56	--	--	--	--	4.7	1.9	--	--	--	--
Vinyl chloride		0.21	0.52	--	--	--	--	4.3	2.3	--	--	--	--

Table 9

Organic Matter Pre-Treatment Evaluation
Ion Exchange Test Column Analytical Results
Former Kop-Flex Facility Site
Hanover, Maryland (a)

		Week 3						Week 4					
	Date:	**4/26/2021**		**4/28/2021**		**4/30/2021**		**5/3/2021**		**5/5/2021**		**5/7/2021**	
	Totalizer (gal, b):	**2,126.1**		**2,382.4**		**2,637.9**		**2,892.2**		**3,159.0**		**3,327.4**	
	Sample location:	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**	**Column Influent**	**Column Effluent**
Parameters													
TOC (mg/L)		0.94	0.96	0.74	1.3	0.76	0.77	1.5	1.4	1.4	1.4	1.5	1.4
Tannins & lignins (mg/L)		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,4-Dioxane (µg/L)		80	89	--	--	--	--	77	88	--	--	--	--
VOCs (µg/L)													
1,1,1-Trichloroethane		17	18	--	--	--	--	16	17	--	--	--	--
1,1,2-Trichloroethane		0.20 U	0.20 U	--	--	--	--	0.20 U	0.20 U	--	--	--	--
1,1-Dichloroethane		40	40	--	--	--	--	39	39	--	--	--	--
1,1-Dichloroethene		190	190	--	--	--	--	200	200	--	--	--	--
1,2-Dichloroethane		1.4	1.4	--	--	--	--	1.3	1.3	--	--	--	--
2-Butanone		0.30 U	0.30 U	--	--	--	--	0.30 U	0.30 U	--	--	--	--
Acetone		0.70 U	0.70 U	--	--	--	--	0.70 U	0.70 U	--	--	--	--
Chloroethane		3.8	3.8	--	--	--	--	4.1	4.0	--	--	--	--
Chloroform		0.22	0.22	--	--	--	--	0.20 U	0.20 U	--	--	--	--
cis-1,2-Dichloroethene		1.2	1.3	--	--	--	--	0.20 U	1.4	--	--	--	--
Methyl tertiary butyl ether		0.55	0.57	--	--	--	--	0.48	0.50	--	--	--	--
Methylene Chloride		0.33	0.34	--	--	--	--	0.30 U	0.30 U	--	--	--	--
Tetrachloroethene		0.22	0.20 U	--	--	--	--	0.23	0.28	--	--	--	--
Trichloroethene		0.20 U	0.91	--	--	--	--	0.94	1.0	--	--	--	--
Vinyl chloride		0.38	0.35	--	--	--	--	0.45	0.46	--	--	--	--

Notes:

a/ TOC = total organic carbon; VOC = volatile organic compound; U = parameter not detected about the method detection limit; -- = parameter not analyzed.
gal = gallons; mg/L = milligrams per liter; µg/L = micrograms per liter; SM = Standard Method; EPA = US Environmental Protection Agency.
TOC analyzed using SM 5550B; tannins and lignins analyzed using SM 5310C; 1,4-dioxane analyzed using EPA SW-846 Test Method 8260C with Selected Ion Monitoring;
VOCs analyzed using EPA SW-846 Test Method 8260C. Only detected VOCs are listed.

b/ A digital flow meter/totalizer was used to monitor the instantaneous flow rate and the total volume of water processed by the column during the treatability test. The flow rate was maintained at approximately 440 milliliters per minute for the duration of the test. The totalizer reading was recorded each day just prior to sample collection.

Table 10

Well Construction
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Installation Date	Well Diameter (inches)	TOC Elevation (ft amsl)	Total Depth (ft btoc)	Screen Length / Open Borehole (feet)	Screen Interval Depth (ft btoc)	Screen Interval Elevation (ft amsl)
Shallow (Unconfined) Zone							
MW-01	03/30/96	2	113.6	36	10.0	26.0 - 36.0	87.60 - 77.60
MW-03	04/01/96	2	113.6	21.7	10.0	11.7 - 21.7	101.90 - 91.90
MW-04	04/02/96	2	124.4	34.3	10.0	24.3 - 34.3	100.10 - 90.10
MW-05R	09/13/16	2	123.5	33	10.0	23.0 - 33.0	100.50 - 90.50
MW-09	12/10/96	2	125.1	25	10.0	15.0 - 25.0	110.10 - 100.10
MW-16	08/2010	2	124.0	50.2	10.0	40.2 - 50.2	83.80 - 73.80
MW-18	11/30/11	2	125.1	58.3	10.0	48.3 - 58.3	76.80 - 66.80
MW-20	11/29/11	2	125.4	50	5.0	45.0 - 50.0	80.40 - 75.40
MW-38R	09/13/16	2	125.4	33.3	10.0	23.3 - 33.3	102.10 - 92.10
MW-39	04/04/14	2	124.6	54	10.0	44.0 - 54.0	80.60 - 70.60
MW-42	09/13/16	2	125.9	33.2	10.0	23.2 - 33.2	102.70 - 92.70
MW-43	09/14/16	2	122.8	47.5	10.0	37.5 - 47.5	85.30 - 75.30
MW-44	09/15/16	2	127.1	42.8	10.0	32.8 - 42.8	94.30 - 84.30
Deep (Confined) Zone							
MW-01D	12/03/11	2	129.4	112.2	10.0	102.2 - 112.2	27.20 - 17.20
MW-16D	12/19/10	2	124.1	100.2	10.0	90.2 - 100.2	33.90 - 23.90
MW-21D	03/22/12	2	126.3	106	10.0	96.0 - 106.0	30.30 - 20.30
MW-22D	03/23/12	2	128.9	114.9	10.0	104.9 - 114.9	24.00 - 14.00
MW-23D	03/21/12	2	125.2	95	10.0	85.0 - 95.0	40.20 - 30.20
MW-27D	08/27/13	2	117.2	117.3	10.0	107.3 - 117.3	9.90 - -0.10
MW-40D	09/21/16	2	124.1	95.8	10.0	85.8 - 95.8	38.30 - 28.30
MW-41D	09/23/16	2	127.1	164	10.0	154.0 - 164.0	-26.90 - -36.90
RECOVERY WELLS							
Shallow (Unconfined) Zone							
RW-1S	09/12/16	1	122.9	62	35.0	27.0 - 62.0	95.90 - 60.90
RW-2S	09/11/16	1	123.5	60.5	35.0	25.5 - 60.5	98.00 - 63.00
RW-3S	09/11/16	1	125.4	62	35.0	27.0 - 62.0	98.40 - 63.40
Deep (Confined) Zone							
RW-1D	09/09/16	1	126.9	126	40.0	86.0 - 126.0	40.90 - 0.90
RW-2D	08/31/16	1	127.4	145.6	40.0	105.6 - 145.6	21.80 - -18.20

Notes:
a/ TOC = top of casing; ft amsl = feet above mean sea level; ft btoc = feet below top of casing.

Table 11

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	12/7/2016 (b)		2/1/2017 (b)		3/21/2017		4/7/2017		4/10/2017		4/13/2017		4/17/2017	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	NM	-	15.98	113.82	16.16	113.64	15.93	113.87	15.95	113.85	15.94	113.86	15.90	113.90
MW-03	Shallow	113.6	6.78	106.82	6.83	106.77	6.79	106.81	6.41	107.19	6.76	106.84	6.91	106.69	6.90	106.70
MW-04	Shallow	124.4	12.28	112.12	11.14	113.26	11.17	113.23	11.05	113.35	11.09	113.31	11.06	113.34	11.13	113.27
MW-05R	Shallow	123.5	15.87	107.63	13.49	110.01	15.98	107.52	16.15	107.35	16.38	107.12	16.45	107.05	16.47	107.03
MW-09	Shallow	125.1	10.84	114.26	11.30	113.80	11.51	113.59	11.41	113.69	11.41	113.69	11.51	113.59	11.48	113.62
MW-16	Shallow	124.0	10.92	113.08	11.12	112.88	11.66	112.34	11.74	112.26	11.81	112.19	11.82	112.18	12.08	111.92
MW-18	Shallow	125.1	20.77	104.33	20.84	104.26	22.85	102.25	22.85	102.25	23.11	101.99	23.18	101.92	23.19	101.91
MW-20	Shallow	125.4	NM	-	12.24	113.16	12.5	112.90	12.33	113.07	12.31	113.09	12.3	113.10	13.38	112.02
MW-38R	Shallow	125.4	15.58	109.82	15.76	109.64	19.64	105.76	19.6	105.80	20.81	104.59	19.81	105.59	19.84	105.56
MW-39	Shallow	124.6	NM	-	20.96	103.64	22.64	101.96	22.55	102.05	21.86	102.74	23	101.60	23.01	101.59
MW-42	Shallow	125.9	16.18	109.72	16.26	109.64	19.28	106.62	19.33	106.57	19.52	106.38	19.49	106.41	19.55	106.35
MW-43	Shallow	122.8	19.25	103.55	19.31	103.49	20.68	102.12	20.31	102.49	20.61	102.19	21.81	100.99	20.92	101.88
MW-44	Shallow	127.1	14.93	112.17	15.25	111.85	17.7	109.40	17.08	110.02	17.18	109.92	17.35	109.75	17.23	109.87
MW-45	Shallow	126.7	NM	-	NM	-	14.1	112.62	13.85	112.87	13.85	112.87	13.85	112.87	13.75	112.97
RW-1S	Shallow	122.9	12.96	109.94	13.17	109.73	12.96	109.94	20.36	102.54	20.6	102.30	20.56	102.34	20.60	102.30
RW-2S	Shallow	123.5	14.12	109.38	14.02	109.48	28.55	94.95	28.88	94.62	29.81	93.69	29	94.50	29.14	94.36
RW-3S	Shallow	125.4	14.29	111.11	14.24	111.16	20.34	105.06	23.49	101.91	23.59	101.81	23.69	101.71	23.73	101.67
MW-01D	Deep	129.4	42.81	86.59	42.22	87.18	56.15	73.25	56.06	73.34	56.22	73.18	56.44	72.96	56.37	73.03
MW-16D	Deep	124.1	34.91	89.19	34.72	89.38	37.55	86.55	37.6	86.50	38.02	86.08	38.1	86.00	37.94	86.16
MW-21D	Deep	126.3	37.8	88.50	37.59	88.71	47.12	79.18	47.26	79.04	47.57	78.73	47.61	78.69	47.58	78.72
MW-22D	Deep	128.9	40.78	88.07	40.49	88.36	43.28	85.57	43.3	85.55	43.59	85.26	43.76	85.09	43.73	85.12
MW-23D	Deep	125.2	35.14	90.06	34.74	90.46	36.33	88.87	36.29	88.91	36.72	88.48	36.81	88.39	36.61	88.59
MW-24D	Deep	129.1	46.3	82.80	45.73	83.37	47.44	81.66	47.71	81.39	48	81.10	48.16	80.94	48.29	80.81
MW-27D	Deep	117.2	29.66	87.54	26.78	90.42	27.73	89.47	27.68	89.52	28.18	89.02	28.3	88.90	28.03	89.17
MW-40D	Deep	124.1	35.14	88.96	34.94	89.16	37.19	86.91	37.51	86.59	37.98	86.12	37.98	86.12	37.85	86.25
MW-41D	Deep	127.1	41.98	85.12	41.44	85.66	44.00	83.10	44.06	83.04	44.48	82.62	44.56	82.54	44.43	82.67
MW-46D	Deep	124.8	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
RW-1D	Deep	126.9	38.53	88.37	38.19	88.71	58.69	68.21	59.02	67.88	59.06	67.84	59.02	67.88	59.26	67.64
RW-2D	Deep	127.4	42.31	85.09	41.62	85.78	68.82	58.58	68.51	58.89	68.39	59.01	68.78	58.62	68.63	58.77

Table 11

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	5/1/2017		5/8/2017		8/31/2017		10/25/2017		11/14/2017		5/30/2018		11/7/2018	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	15.92	113.88	15.81	113.99	15.49	114.31	NA	NA	14.17	115.63	15.52	114.28	13.99	115.81
MW-03	Shallow	113.6	6.96	106.64	6.87	106.73	7.59	106.01	NA	NA	7.27	106.33	7.17	106.43	6.43	107.17
MW-04	Shallow	124.4	10.95	113.45	10.91	113.49	10.66	113.74	NA	NA	10.97	113.43	10.19	114.21	9.16	115.24
MW-05R	Shallow	123.5	16.60	106.90	16.60	106.90	16.90	106.60	NA	NA	16.78	106.72	15.89	107.61	15.51	107.99
MW-09	Shallow	125.1	11.41	113.69	11.34	113.76	11.09	114.01	NA	NA	NA	NA	10.78	114.32	9.16	115.94
MW-16	Shallow	124.0	11.99	112.01	11.81	112.19	11.90	112.10	NA	NA	12.00	112.00	11.76	112.24	10.96	113.04
MW-18	Shallow	125.1	23.30	101.80	23.28	101.82	24.63	100.47	NA	NA	24.41	100.69	23.80	101.30	23.13	101.97
MW-20	Shallow	125.4	13.01	112.39	12.24	113.16	12.39	113.01	NA	NA	11.98	113.42	12.15	113.25	11.74	113.66
MW-38R	Shallow	125.4	19.94	105.46	19.96	105.44	20.16	105.24	NA	NA	19.93	105.47	19.35	106.05	18.67	106.73
MW-39	Shallow	124.6	23.05	101.55	23.00	101.60	24.51	100.09	NA	NA	23.93	100.67	23.72	100.88	23.09	101.51
MW-42	Shallow	125.9	19.68	106.22	19.67	106.23	19.95	105.95	NA	NA	19.82	106.08	19.16	106.74	18.55	107.35
MW-43	Shallow	122.8	21.11	101.69	20.90	101.90	21.73	101.07	NA	NA	21.66	101.14	20.47	102.33	20.60	102.20
MW-44	Shallow	127.1	17.31	109.79	17.27	109.83	17.18	109.92	NA	NA	17.00	110.10	16.32	110.78	15.78	111.32
MW-45	Shallow	126.7	13.67	113.05	13.60	113.12	13.20	113.52	NA	NA	13.80	112.92	12.98	113.74	12.00	114.72
RW-1S	Shallow	122.9	20.80	102.10	20.79	102.11	21.49	101.41	NA	NA	21.98	100.92	22.88	100.02	23.97	98.93
RW-2S	Shallow	123.5	29.61	93.89	29.74	93.76	32.10	91.40	NA	NA	30.76	92.74	28.37	95.13	27.48	96.02
RW-3S	Shallow	125.4	24.32	101.08	24.46	100.94	26.20	99.20	NA	NA	28.47	96.93	26.91	98.49	24.39	101.01
MW-01D	Deep	129.4	56.40	73.00	56.29	73.11	56.70	72.70	58.17	71.23	58.09	71.31	58.03	71.37	57.22	72.18
MW-16D	Deep	124.1	37.98	86.12	38.08	86.02	41.1	83.00	40.71	83.39	40.63	83.47	40.37	83.73	39.33	84.77
MW-21D	Deep	126.3	47.54	78.76	47.61	78.69	56.7	69.60	50.61	75.69	50.53	75.77	50.38	75.92	49.61	76.69
MW-22D	Deep	128.9	43.82	85.03	43.81	85.04	46.71	82.14	46.74	82.11	46.25	82.60	46.30	82.55	35.31	93.54
MW-23D	Deep	125.2	36.71	88.49	36.77	88.43	39.9	85.30	39.21	85.99	39.04	86.16	38.87	86.33	37.72	87.48
MW-24D	Deep	129.1	48.35	80.75	48.37	80.73	55.82	73.28	52.15	76.95	51.99	77.11	50.94	78.16	50.72	78.38
MW-27D	Deep	117.2	28.21	88.99	28.21	88.99	31.11	86.09	30.52	86.68	30.34	86.86	30.20	87.00	29.17	88.03
MW-40D	Deep	124.1	38.01	86.09	38.04	86.06	41.00	83.10	40.75	83.35	40.50	83.60	40.44	83.66	39.60	84.50
MW-41D	Deep	127.1	44.61	82.49	44.62	82.48	49.18	77.92	47.94	79.16	47.71	79.39	47.56	79.54	46.56	80.54
MW-46D	Deep	124.8	NM	-	NM	-	NM	-	NM	-	NM	-	37.37	87.40	32.65	92.12
RW-1D	Deep	126.9	58.88	68.02	58.99	67.91	60.23	66.67	62.62	64.28	63.62	63.28	62.75	64.15	62.97	63.93
RW-2D	Deep	127.4	68.70	58.70	68.44	58.96	70.11	57.29	68.90	58.50	68.95	58.45	69.21	58.19	68.34	59.06

Table 11

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	5/21/2019		11/19/2019		5/12/2020		11/22/2020		5/9/2021		11/14/2021 (b)	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	13.98	115.82	16.47	113.33	15.67	114.13	15.58	114.22	14.75	115.05	15.35	114.45
MW-03	Shallow	113.6	7.08	106.52	7.02	106.58	6.09	107.51	6.1	107.50	6.4	107.20	5.86	107.74
MW-04	Shallow	124.4	8.80	115.60	11.07	113.33	11.00	113.40	10.85	113.55	9.75	114.65	10.43	113.97
MW-05R	Shallow	123.5	15.74	107.76	16.61	106.89	16.55	106.95	15.84	107.66	NM	-	13.52	109.98
MW-09	Shallow	125.1	9.61	115.49	12.00	113.10	11.57	113.53	11.23	113.87	10.35	114.75	10.85	114.25
MW-16	Shallow	124.0	9.37	114.63	12.43	111.57	11.66	112.34	11.68	112.32	11.15	112.85	11.05	112.95
MW-18	Shallow	125.1	22.97	102.13	21.12	103.98	23.10	102.00	23.80	101.30	26.71	98.39	21.42	103.68
MW-20	Shallow	125.4	10.64	114.76	12.98	112.42	12.57	112.83	12.11	113.29	11.22	114.18	11.34	114.06
MW-38R	Shallow	125.4	19.13	106.27	19.83	105.57	19.03	106.37	19.25	106.15	18.55	106.85	15.63	109.77
MW-39	Shallow	124.6	23.00	101.60	23.94	100.66	23.04	101.56	23.52	101.08	22.98	101.62	21.29	103.31
MW-42	Shallow	125.9	18.91	106.99	19.44	106.46	18.85	107.05	NM	-	17.98	107.92	15.64	110.26
MW-43	Shallow	122.8	21.46	101.34	22.04	100.76	20.98	101.82	21.91	100.89	21.02	101.78	20.10	102.70
MW-44	Shallow	127.1	15.91	111.19	17.24	109.86	16.30	110.80	16.52	110.58	16.26	110.84	15.21	111.89
MW-45	Shallow	126.7	11.75	114.97	14.55	112.17	NM	-	13.61	113.11	12.69	114.03	13.35	113.37
RW-1S	Shallow	122.9	26.42	96.48	28.64	94.26	29.16	93.74	28.13	94.77	25.00	97.90	13.28	109.62
RW-2S	Shallow	123.5	31.16	92.34	31.70	91.80	33.33	90.17	35.31	88.19	34.85	88.65	16.02	107.48
RW-3S	Shallow	125.4	22.10	103.30	23.24	102.16	22.85	102.55	26.72	98.68	25.36	100.04	15.69	109.71
MW-01D	Deep	129.4	56.55	72.85	59.49	69.91	57.17	72.23	59.91	69.49	57.46	71.94	45.20	84.20
MW-16D	Deep	124.1	38.30	85.80	40.99	83.11	38.67	85.43	39.97	84.13	38.81	85.29	37.06	87.04
MW-21D	Deep	126.3	48.38	77.92	50.75	75.55	48.50	77.80	50.37	75.93	48.64	77.66	41.50	84.80
MW-22D	Deep	128.9	44.02	84.83	46.20	82.65	44.05	84.80	46.55	82.30	44.72	84.13	43.36	85.49
MW-23D	Deep	125.2	36.88	88.32	39.40	85.80	37.16	88.04	39.22	85.98	37.36	87.84	36.73	88.47
MW-24D	Deep	129.1	49.67	79.43	51.12	77.98	48.80	80.30	53.02	76.08	50.01	79.09	49.40	79.70
MW-27D	Deep	117.2	28.15	89.05	30.68	86.52	28.64	88.56	30.62	86.58	28.89	88.31	28.72	88.48
MW-40D	Deep	124.1	38.50	85.60	41.16	82.94	38.59	85.51	40.97	83.13	39.00	85.10	37.48	86.62
MW-41D	Deep	127.1	45.42	81.68	48.50	78.60	45.28	81.82	48.65	78.45	45.95	81.15	44.51	82.59
MW-46D	Deep	124.8	35.47	89.30	37.90	86.87	35.73	89.04	37.72	87.05	35.95	88.82	35.62	89.15
RW-1D	Deep	126.9	62.44	64.46	64.86	62.04	NM	-	NM	-	NM	-	41.71	85.19
RW-2D	Deep	127.4	68.19	59.21	71.36	56.04	69.35	58.05	69.72	57.68	69.41	57.99	43.90	83.50

a/ Vertical datum is NAVD-88.
NM = not measured; TOC = top of casing; NA = not available because the well had not been installed.
Light gray shading denotes wells screened in the shallow (unconfined) zone; blue shading denotes wells screened in the deep (confined) zone.
Continuous pumping of the groundwater recovery well system started on March 29, 2017.
Water levels from both shallow and deep recovery wells were measured in piezometers co-located with the wells.
b/ Water level measurements representative of non-pumping conditions in the aquifer system.

Table 12

2021 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

		Shallow Wells											
	Well ID:	**MW-01**		**MW-03**		**MW-04**		**MW-05R**		**MW-09**		**MW-16**	
	Date Sampled:	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**												
Chloroethane	2,100	1 U	1 U	1 U	1 U	2.5 U	1 U	NS	1 U	1 U	1 U	4.2	12.5 U
Chloroform	80	1 U	1 U	1 U	1 U	2.5 U	3.1	NS	1 U	1 U	1 U	10 U	12.5 U
1,1-Dichloroethane	2.8	1 U	1 U	1 U	1 U	**130**	**82.7**	NS	1.6	**3**	2.5	**169**	**1,350**
1,2-Dichloroethane	5	1 U	1 U	1 U	1 U	2.9	1.2	NS	1 U	1 U	1 U	2 U	12.5 U
1,1-Dichloroethene	7	1 U	1 U	1 U	1 U	**361**	**175**	NS	1.4	**56.3**	**53.3**	**276**	**1,630**
cis-1,2-Dichloroethene	70	1 U	1 U	1 U	1 U	2.5 U	1 U	NS	1 U	1 U	1 U	2.1	12.5 U
1,4-Dioxane	15 (c)	2 U	2 U	2 U	2 U	**303**	**134**	NS	12.0	**23.6**	**22.6**	**19.3**	**76.0**
2-Butanone (MEK)	560	5 U	5 U	5 U	5 U	12.5 U	5 U	NS	5 U	5 U	5 U	24.6	62.5 U
Methyl tert-butyl ether	20	1 U	1 U	1 U	1 U	2.5 U	1 U	NS	1 U	1 U	1 U	2 U	12.5 U
Tetrachloroethene	5	1 U	1 U	1 U	1 U	2.5 U	1 U	NS	1 U	1 U	1 U	2.2	12.5 U
1,1,1-Trichloroethane	200	1 U	1 U	1 U	1 U	3.4	1 U	NS	2.4	1 U	1 U	123	**1,720**
Trichloroethene	5	1 U	1 U	1 U	1 U	2.5 U	1.5	NS	1 U	1 U	1 U	**6.2**	12.5 U

Table 12

2021 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

		Shallow Wells										
	Well ID:	**MW-18**		**MW-20**			**MW-38R**		**MW-39**		**MW-42**	
	Date Sampled:	**5/9/21**	**11/14/21**	**5/9/21**	**Duplicate (d)**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**											
Chloroethane	2,100	1 U	1 U	2 U	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	80	1 U	1 U	2 U	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2.8	1 U	1 U	**214**	**207**	**256**	**5.5**	**6.7**	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	1 U	1 U	**7.5**	**7.9**	**8.7**	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	1 U	1 U	**267**	**262**	**321**	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	70	1 U	1 U	2.2	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	15 (c)	2 U	2 U	**1,010**	**955**	**1,210**	**47**	**46.2**	2 U	2 U	13.3	12.5
2-Butanone (MEK)	560	5 U	5 U	4 U	5 U	4 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	20	1 U	1 U	2 U	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5	1 U	1 U	2 U	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	1 U	1 U	2 U	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	1 U	1 U	2 U	2.5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 12

2021 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

		Shallow Wells				Deep Wells							
	Well ID:	**MW-43**		**MW-44**		**MW-01D**		**MW-16D**				**MW-21D**	
	Date Sampled:	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**Duplicate (d)**	**11/14/21**	**Duplicate (d)**	**5/9/21**	**11/14/21**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**												
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	80	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2.8	2.7	2.6	1.7	**3.8**	1.8	**3.8**	**27.7**	**26.4**	**21.5**	**17.0**	1 U	1 U
1,2-Dichloroethane	5	1 U	1 U	1 U	1 U	1 U	1 U	1.7	1.6	1.1	1 U	1 U	1 U
1,1-Dichloroethene	7	**31.7**	**31.3**	2.9	**7.2**	**12.2**	**22.4**	**130**	**117**	**98.7**	**67.2**	4.1	**18.7**
cis-1,2-Dichloroethene	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	15 (c)	**34.1**	**34.3**	10.2	13.3	9.0	**16.5**	**107**	**111**	**84.5**	**84.2**	2.8	12.9
2-Butanone (MEK)	560	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	20	2.7	2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.6	3.6
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	1 U	1 U	6.9	15.4	1 U	1.5	9.5	8.7	6.9	5.3	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 12

2021 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

		Deep Wells									
	Well ID:	**MW-22D**		**MW-23D**		**MW-27D**		**MW-40D**		**MW-41D**	
	Date Sampled:	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**	**5/9/21**	**11/14/21**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**										
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	80	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2.8	1 U	1 U	**31.8**	**28.5**	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	1 U	1 U	1.5	1.1	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	5.9	6.2	**126**	**110**	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	15 (c)	4.0	5.2	**99**	**92.4**	2 U	2 U	2 U	2 U	1 U	1 U
2-Butanone (MEK)	560	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	20	1 U	1 U	1 U	1 U	1 U	1 U	2.7	1.7	1 U	1 U
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	1 U	1 U	11.7	9.2	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

a/ U = not detected above the method detection limit; VOC = volatile organic compound; NS = not sampled.
Only detected VOC concentrations are provided.
All concentrations are in micrograms per liter (µg/L).
Results shown in **bold** exceed the cleanup standard.
November 2021 samples are representative of non-pumping conditions.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

c/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

d/ Duplicate sample listed to the right of the original sample.

Table 13

Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
	Groundwater Quality Standard (c)		**2.8**	**7**	**15 (d)**
MW-01	**Shallow**	*5/14/2020*	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U
MW-03	**Shallow**	*12/8/2016*	1.0 U	1.0 U	4.6
		5/1/2017	1.0 U	1.0 U	2.0 U
		5/30/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		5/12/2020	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U
MW-04	**Shallow**	*12/7/2016*	**259**	**1,020**	**576**
		5/2/2017	**103**	**459**	**252**
		11/15/2017	**29.2**	**151**	**121**
		5/30/2018	**33.3**	**153**	**92.7**
		11/7/2018	**23.3**	**89.9**	1.0 U
		5/21/2019	**57.7**	**142**	**111**
		11/19/2019	**45.1**	**126**	**94.2**
		5/13/2020	**58.6**	**149**	**84.6**
		11/22/2020	**62.0**	**141**	**151**
		5/9/2021	**130**	**361**	**303**
		11/14/2021	**82.7**	**175**	**134**
MW-05R	**Shallow**	*12/7/2016*	1.0 U	1.0 U	**16.5**
		5/1/2017	1.4	1.4	**16.5**
		11/15/2017	1.6	2.5	11.0
		5/30/2018	1.8	2.7	11.5
		11/7/2018	1.0 U	1.3	2.0 U
		5/21/2019	1.0 U	1.0 U	7.6
		11/19/2019	1.0 U	1.0 U	6.8
		5/12/2020	1.8	1.7	13.4
		11/22/2020	1.0 U	1.0 U	2.2
		11/14/2021	1.6	1.4	12.0
MW-09	**Shallow**	*12/8/2016*	**4.5**	**104**	**95.5**
		5/2/2017	**2.9**	**63.8**	**20.8**
		11/15/2017	**3.1**	**60.2**	**32.4**
		5/30/2018	2.2	**49.2**	**23.4**
		11/7/2018	**4.5**	**75.9**	**37.4**
		5/21/2019	**3.6**	**70.8**	**32.8**
		11/19/2019	2.6	**48.7**	**24.4**
		5/13/2020	2.6	**50.5**	**18.7**
		11/22/2020	2.5	**56.4**	**25.7**
		5/9/2021	**3.0**	**56.3**	**23.6**
		11/14/2021	2.5	**53.3**	**22.6**

Table 13

Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
	Groundwater Quality Standard (c)		**2.8**	**7**	**15 (d)**
MW-16	**Shallow**	*12/8/2016*	**6,420**	**26,200**	**1,450**
		5/2/2017	**7,910**	**10,500**	**971**
		11/15/2017	**7,110**	**7,740**	**836**
		5/30/2018	**6,250**	**4,690**	**636**
		11/7/2018	**7,360**	**7,800**	**866**
		5/22/2019	**343**	**1,160**	**1,230**
		11/19/2019	**608**	**1,440**	**81.9**
		5/13/2020	**425**	**594**	**39.2**
		11/22/2020	**1,560**	**1,130**	**84.2**
		5/9/2021	**169**	**276**	**19.3**
		11/14/2021	**1,350**	**1,630**	**76.0**
MW-18	**Shallow**	*12/7/2016*	1.0 U	1.0 U	2.0 U
		5/1/2017	1.0 U	1.0 U	2.0 U
		11/15/2017	1.0 U	1.0 U	**24.9**
		5/30/2018	1.0 U	1.0 U	2.0 U
		11/7/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		11/19/2019	1.0 U	1.0 U	2.0 U
		5/12/2020	1.0 U	1.0 U	2.0 U
		11/22/2020	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U
MW-20	**Shallow**	*12/9/2016*	**99.7**	**173**	**767**
		5/2/2017	**161**	**286**	**967**
		11/15/2017	**136**	**223**	**969**
		5/30/2018	**115**	**205**	**966**
		11/7/2018	**145**	**233**	**986**
		5/21/2019	**157**	**226**	**1,620**
		11/19/2019	**175**	**244**	**1,220**
		5/13/2020	**188**	**232**	**1,000**
		11/22/2020	**205**	**272**	**1,260**
		5/9/2021	**214**	**267**	**1,010**
		11/14/2021	**256**	**321**	**1,210**
MW-38R	**Shallow**	*12/9/2016*	**3.8**	1.0 U	**18.3**
		5/1/2017	**6.0**	1.0 U	**42.6**
		11/15/2017	**8.3**	1.0 U	**62.5**
		5/30/2018	**4.3**	1.0 U	**40.7**
		11/7/2018	**6.9**	1.0 U	**39.4**
		5/21/2019	**4.7**	1.0 U	**43.2**
		11/19/2019	**7.7**	1.0 U	**51.5**
		5/12/2020	**6.2**	1.0 U	**40.8**
		11/22/2020	**6.5**	1.0 U	**40.9**
		5/9/2021	**5.5**	1.0 U	**47.0**
		11/14/2021	**6.7**	1.0 U	**46.2**

Table 13

Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
	Groundwater Quality Standard (c)		**2.8**	**7**	**15 (d)**
MW-39	**Shallow**	*12/7/2016*	1.0 U	1.7	2.5
		5/1/2017	1.0 U	1.1	3.0
		11/15/2017	1.0 U	0.6 J	2.2
		5/30/2018	1.0 U	1.0 U	2.0 U
		11/7/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		11/19/2019	1.0 U	1.0 U	2.0 U
		5/12/2020	1.0 U	1.0 U	2.0 U
		11/22/2020	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U
MW-42	**Shallow**	*12/7/2016*	1.0 U	1.0 U	4.8
		5/1/2017	1.0 U	1.0 U	8.0
		11/15/2017	1.0 U	1.0 U	**19.3**
		5/30/2018	1.0 U	1.0 U	7.4
		11/7/2018	1.0 U	1.0 U	10.3
		5/21/2019	1.0 U	1.0 U	10.6
		11/19/2019	1.0 U	1.0 U	5.6
		5/12/2020	1.0 U	1.0 U	11.2
		1/6/2021	1.0 U	1.0 U	13.2
		5/9/2021	1.0 U	1.0 U	13.3
		11/14/2021	1.0 U	1.0 U	12.5
MW-43	**Shallow**	*12/7/2016*	**15.9**	**171**	**237**
		5/1/2017	**21.3**	**177**	**206**
		11/15/2017	**15.9**	**159**	**165**
		5/30/2018	**5.9**	**68**	**57.6**
		11/7/2018	**13.8**	**118**	**107**
		5/21/2019	**5.2**	**53.9**	**52.0**
		11/19/2019	**4.3**	**48.5**	**55.2**
		5/12/2020	**3.8**	**46.3**	**49.0**
		11/22/2020	**2.9**	**31.8**	**42.7**
		5/9/2021	2.7	**31.7**	**34.1**
		11/14/2021	2.6	**31.3**	**34.3**
MW-44	**Shallow**	*12/7/2016*	1.0 U	1.0 U	2.0 U
		5/1/2017	**6.6**	5.9	**49.1**
		5/30/2018	1.4	1.4	8.4
		5/21/2019	**14.9**	**22.4**	**64.4**
		5/13/2020	**3.0**	4.1	**17.7**
		5/9/2021	1.7	2.9	10.2
		11/14/2021	**3.8**	**7.2**	13.3

Table 13

Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
	Groundwater Quality Standard (c)		**2.8**	**7**	**15 (d)**
MW-01D	**Deep**	*1/2/2017*	**72**	**375**	**236**
		5/3/2017	**105**	**407**	**329**
		11/15/2017	**80**	**277**	**243**
		5/30/2018	**14.9**	**71.4**	**64.4**
		11/7/2018	**7.1**	**38.8**	2.0 U
		5/21/2019	2.1	**13.7**	12.8
		11/19/2019	**3.4**	**17.7**	**17.9**
		5/18/2020	2.6	**16.5**	12.8
		11/22/2020	**3.1**	**17.6**	**16.9**
		5/9/2021	1.8	**12.2**	9.0
		11/14/2021	**3.8**	**22.4**	**16.5**
MW-16D	**Deep**	*12/8/2016*	**56.6**	**254**	**202**
		5/2/2017	**43.7**	**235**	**182**
		11/15/2017	**29.7**	**179**	**192**
		5/30/2018	**27.1**	**188**	**156**
		11/7/2018	**28.9**	**180**	**158**
		5/22/2019	**28.5**	**172**	**148**
		11/19/2019	**26.6**	**142**	**140**
		5/13/2020	**29.1**	**145**	**130**
		12/8/2020	**25.9**	**127**	**105**
		5/9/2021	**27.7**	**130**	**111**
		11/14/2021	**21.5**	**98.7**	**84.5**
MW-21D	**Deep**	*12/16/2016*	2.6	**23.4**	**18.6**
		5/1/2017	**6.9**	**111**	**57.5**
		11/15/2017	2.0	**14.4**	**18.5**
		5/30/2018	1.0	**38.8**	**32.2**
		11/7/2018	1.0 U	**30.0**	**18.0**
		5/21/2019	1.0 U	**9.9**	8.4
		11/19/2019	1.0 U	4.1	4.1
		5/18/2020	1.0 U	**13.6**	7.6
		11/22/2020	1.0 U	**7.8**	5.1
		5/9/2021	1.0 U	4.1	2.8
		11/14/2021	1.0 U	**18.7**	12.9

Table 13

Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
	Groundwater Quality Standard (c)		**2.8**	**7**	**15 (d)**
MW-22D	**Deep**	*12/7/2016*	2.5	**31.5**	**24.5**
		5/2/2017	2.5	**36.9**	**24.6**
		11/15/2017	1.72	**24.4**	**19.6**
		5/30/2018	1.0 U	**13.1**	7.9
		11/7/2018	1.0 U	**9.7**	2.0 U
		5/21/2019	1.0 U	6.3	5.1
		11/19/2019	1.0 U	5.6	4.9
		5/18/2020	1.0 U	6.2	4.6
		11/22/2020	1.0 U	**7.1**	4.9
		5/9/2021	1.0 U	5.9	4.0
		11/14/2021	1.0 U	6.2	5.2
MW-23D	**Deep**	*1/2/2017*	**26.4**	**140**	**151**
		5/1/2017	**39.1**	**208**	**177**
		11/15/2017	**31.1**	**179**	**158**
		5/30/2018	**30.5**	**172**	**148**
		11/7/2018	**36.2**	**185**	**146**
		5/21/2019	**18.5**	**96.4**	**70.7**
		11/19/2019	**22.7**	**107**	**109**
		5/13/2020	**35.2**	**142**	**112**
		11/22/2020	**26.3**	**106**	**96.7**
		5/9/2021	**31.8**	**126**	**99.0**
		11/14/2021	**28.5**	**110**	**92.4**
MW-27D	**Deep**	*12/7/2016*	1.0 U	1.0 U	2.0 U
		5/1/2017	1.0 U	1.0 U	3.6
		5/30/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		5/13/2020	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U
MW-40D	**Deep**	*12/9/2016*	**2.9**	**18.1**	9.4
		5/1/2017	**3.1**	**17.4**	8.5
		11/15/2017	0.9 J	5.2	5.2
		5/30/2018	1.0 U	2.9	2.0 U
		11/7/2018	1.0 U	4.4	2.7
		5/21/2019	1.0 U	1.0 U	2.0 U
		11/19/2019	1.0 U	1.0 U	2.0 U
		5/18/2020	1.0 U	1.0 U	2.0 U
		11/22/2020	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U

Table 13

Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)

			VOCs (µg/l)		
Well ID	**Zone**	**Sample Date**	**1,1-DCA**	**1,1-DCE**	**1,4-Dioxane**
	Groundwater Quality Standard (c)		**2.8**	**7**	**15 (d)**
MW-41D	**Deep**	*12/16/2016*	1.0 U	1.0 U	2.8
		5/17/2017	1.0 U	1.0 U	2.4
		5/30/2018	1.0 U	1.1	2.0 U
		5/21/2019	1.0 U	1.0 U	2.1
		5/18/2020	1.0 U	1.0 U	2.0 U
		5/9/2021	1.0 U	1.0 U	2.0 U
		11/14/2021	1.0 U	1.0 U	2.0 U

a/ Select constituents are presented above, see Appendix B for complete analytical data.

b/ VOCs = volatile organic compounds; µg/l = micrograms per liter; 1,1-DCA = 1,1-dichloroethane; 1,1-DCE = 1,1-dichloroethene; U = compound not detected above reported limit; J = estimated concentration.
Bolded concentrations are greater than the Groundwater Quality Standards.

c/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

d/ Numeric cleanup standards from WSP's October 2, 2015, Response Action Plan, Revision 2.

e/ For duplicate samples, the highest concentration of the duplicate and original sample is listed.

Table 14

Groundwater Sample Trend Evaluation
Former Kop-Flex Facility
Hanover, Maryland (a, b)

Well ID	1,1-DCA Trend	1,1-DCE Trend	1,4-Dioxane Trend
Shallow Monitoring Wells			
MW-01	(b)	(b)	(b)
MW-03	(b)	(b)	(b)
MW-04	No Trend	No Trend	Stable
MW-05R	No Trend	Stable	Stable
MW-09	Probably Decreasing	Probably Decreasing	Stable
MW-16	Decreasing	Decreasing	Decreasing
MW-18	(b)	(b)	(b)
MW-20	Increasing	Increasing	Increasing
MW-38R	No Trend	(b)	No Trend
MW-39	(b)	(b)	(b)
MW-42	(b)	(b)	Increasing
MW-43	Decreasing	Decreasing	Decreasing
MW-44	No Trend	No Trend	No Trend
Deep Monitoring Wells			
MW-01D	Decreasing	Decreasing	Decreasing
MW-16D	Decreasing	Decreasing	Decreasing
MW-21D	(b)	Decreasing	Decreasing
MW-22D	(b)	Decreasing	Decreasing
MW-23D	Stable	Probably Decreasing	Decreasing
MW-27D	(b)	(b)	(b)
MW-40D	(b)	(b)	(b)
MW-41D	(b)	(b)	(b)
Shallow Recovery Wells			
RW-1S	Decreasing	Decreasing	Decreasing
RW-2S	Decreasing	Decreasing	Decreasing
RW-3S	Probably Increasing	Increasing	Increasing
Deep Recovery Wells			
RW-1D	Increasing	No Trend	Probably Increasing
RW-2D	Decreasing	Decreasing	Decreasing

Orange shading indicates increasing or probably increasing trend
Green shading indicates decreasing or probably decreasing trend

a/ Mann-Kendall statistical evaluation conducted on VOCs with equal to or greater than 50% detection at individual monitoring wells with 4 or more sample results.
1,1-DCA = 1,1-dichloroethane; 1,1-DCE = 1,1-dichloroethene; VOC = volatile organic compound

b/ Trend analysis not performed; more than 50% of the samples had non-detect concentrations.

APPENDIX

A LAB REPORTS FOR SYSTEM SAMPLING (2021)

PHASE SEPARATION SCIENCE

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011305

January 27, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21011305**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21011305**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 17, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Cathy Thompson
QA Officer

PHASE SEPARATION SCIENCE

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21011305

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/13/2021 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21011305-001	Effluent VSP-4	WASTE WATER	01/13/21 10:50

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011305

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/13/2021 10:50** **PSS Sample ID: 21011305-001**
Matrix: WASTE WATER **Date/Time Received: 01/13/2021 12:55**

Dissolved Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.4**	ug/L	1.0		1	01/15/21	01/15/21 19:17	1051
Lead	ND	ug/L	1.0		1	01/15/21	01/15/21 19:17	1051
Nickel	**13.6**	ug/L	1.00		1	01/15/21	01/15/21 19:17	1051
Zinc	**20.2**	ug/L	20.0		1	01/15/21	01/15/21 19:17	1051

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**6.2**	ug/L	1.0		1	01/15/21	01/15/21 16:40	1051
Lead	ND	ug/L	1.0		1	01/15/21	01/15/21 16:40	1051
Nickel	**14.5**	ug/L	1.00		1	01/15/21	01/15/21 16:40	1051
Zinc	**27.1**	ug/L	20.0		1	01/15/21	01/15/21 16:40	1051

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 181072 on Case Narrative.
pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Chloromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Vinyl Chloride	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Bromomethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Chloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Methylene Chloride	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Chloroform	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Benzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Trichloroethene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011305

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/13/2021 10:50** **PSS Sample ID: 21011305-001**
Matrix: WASTE WATER **Date/Time Received: 01/13/2021 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 181072 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Toluene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Tetrachloroethylene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Chlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Ethylbenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
Bromoform	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:45	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*101*	*%*	*87-120*		*1*	*01/14/21*	*01/14/21 11:45*	*1011*
4-Bromofluorobenzene	*101*	*%*	*85-147*		*1*	*01/14/21*	*01/14/21 11:45*	*1011*
Toluene-D8	*101*	*%*	*88-110*		*1*	*01/14/21*	*01/14/21 11:45*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**44**	mg/L	13		20	01/18/21	01/18/21 18:56	1051

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	01/14/21	01/14/21 09:27	1061

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011305

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/13/2021 10:50** **PSS Sample ID: 21011305-001**
Matrix: WASTE WATER **Date/Time Received: 01/13/2021 12:55**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 13-Jan-21 16:30

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		01/18/21	01/18/21 16:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21011305

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21011305: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 181072

Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.15 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21011305

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21011305-001	W	84570	181082	01/15/2021 10:14	01/15/2021 16:40
	84570-1-BKS	BKS	84570-1-BKS	W	84570	181082	01/15/2021 10:14	01/15/2021 14:52
	84570-1-BLK	BLK	84570-1-BLK	W	84570	181082	01/15/2021 10:14	01/15/2021 14:47
	633-011221-01 S	MS	21011201-001 S	W	84570	181082	01/15/2021 10:14	01/15/2021 15:54
	DPS Wet Well S	MS	21011404-004 S	W	84570	181082	01/15/2021 10:14	01/15/2021 17:10
	633-011221-01 SD	MSD	21011201-001 S	W	84570	181082	01/15/2021 10:14	01/15/2021 15:59
EPA 200.8	Effluent VSP-4	Initial	21011305-001	W	84578	181116	01/15/2021 17:20	01/15/2021 19:17
	84578-1-BKS	BKS	84578-1-BKS	W	84578	181116	01/15/2021 17:20	01/15/2021 19:12
	84578-1-BLK	BLK	84578-1-BLK	W	84578	181116	01/15/2021 17:20	01/15/2021 19:07
	Effluent VSP-4 S	MS	21011305-001 S	W	84578	181116	01/15/2021 17:20	01/15/2021 19:22
	Effluent VSP-4 SD	MSD	21011305-001 S	W	84578	181116	01/15/2021 17:20	01/15/2021 19:27
EPA 624 .1	Effluent VSP-4	Initial	21011305-001	W	84575	181072	01/14/2021 07:53	01/14/2021 11:45
	84575-1-BKS	BKS	84575-1-BKS	W	84575	181072	01/14/2021 07:53	01/14/2021 08:26
	84575-1-BLK	BLK	84575-1-BLK	W	84575	181072	01/14/2021 07:53	01/14/2021 10:37
	84575-1-BSD	BSD	84575-1-BSD	W	84575	181072	01/14/2021 07:53	01/14/2021 08:58
SM 2340B	Effluent VSP-4	Initial	21011305-001	W	84570	181146	01/19/2021 12:53	01/18/2021 18:56
SM 2540D -2011	Effluent VSP-4	Initial	21011305-001	W	181021	181021	01/14/2021 09:27	01/14/2021 09:27
	181021-1-BLK	BLK	181021-1-BLK	W	181021	181021	01/14/2021 09:27	01/14/2021 09:27
	GTA-HPP-L D	MD	21011320-001 D	W	181021	181021	01/14/2021 09:27	01/14/2021 09:27
	DPS Wet Well D	MD	21011404-004 D	W	181021	181021	01/14/2021 12:43	01/14/2021 12:43
SM 5210B -2011	Effluent VSP-4	Initial	21011305-001	W	181374	181374	01/18/2021 16:00	01/18/2021 16:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011305

Analytical Method: SM 2540D -2011
Seq Number: 181021 Matrix: Water
MB Sample Id: 181021-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.2000	1.000	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181082 Matrix: Water Date Prep: 01/15/21
MB Sample Id: 84570-1-BLK LCS Sample Id: 84570-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.75	97	85-115	ug/L	
Lead	<1.000	40.00	40.98	102	85-115	ug/L	
Nickel	<1.000	40.00	36.70	92	85-115	ug/L	
Zinc	<20.00	200	186.5	93	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181116 Matrix: Water Date Prep: 01/15/21
MB Sample Id: 84578-1-BLK LCS Sample Id: 84578-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.39	96	85-115	ug/L	
Lead	<1.000	40.00	41.90	105	85-115	ug/L	
Nickel	<1.000	40.00	37.16	93	85-115	ug/L	
Zinc	<20.00	200	190.8	95	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181116 Matrix: Waste Water Date Prep: 01/15/21
Parent Sample Id: 21011305-001 MS Sample Id: 21011305-001 S MSD Sample Id: 21011305-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	3.383	40.00	41.31	95	41.12	94	70-130	1	25	ug/L	
Lead	<1.000	40.00	42.09	105	43.29	108	70-130	3	25	ug/L	
Nickel	13.61	40.00	49.81	91	49.50	90	70-130	1	25	ug/L	
Zinc	20.24	200	211.4	96	209.8	95	70-130	1	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011305

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 181072 Matrix: Water Date Prep: 01/14/21
MB Sample Id: 84575-1-BLK LCS Sample Id: 84575-1-BKS LCSD Sample Id: 84575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	55.63	111	56.86	95	54-148	16	20	ug/L	
Chloromethane	<1.000	50.00	47.55	95	48.69	97	1-205	2	20	ug/L	
Vinyl Chloride	<1.000	50.00	54.36	109	56.78	95	5-195	14	20	ug/L	
Bromomethane	<1.000	50.00	48.52	97	50.25	84	15-185	14	20	ug/L	
Chloroethane	<1.000	50.00	47.72	95	48.57	97	40-160	2	20	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.26	105	52.67	88	50-150	18	20	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.93	98	50.20	84	50-150	15	20	ug/L	
Methylene Chloride	<1.000	50.00	48.37	97	49.84	83	60-140	16	20	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.81	94	48.13	80	70-130	16	20	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.96	98	50.60	84	70-130	15	20	ug/L	
Chloroform	<1.000	50.00	47.69	95	49.33	99	70-135	4	20	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	50.31	101	52.00	87	70-130	15	20	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.48	101	51.77	86	70-130	16	20	ug/L	
Benzene	<1.000	50.00	49.13	98	50.72	85	65-135	14	20	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.77	98	50.04	83	70-130	17	20	ug/L	
Trichloroethene	<1.000	50.00	49.13	98	51.17	85	65-135	14	20	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.65	99	51.38	86	35-165	14	20	ug/L	
Bromodichloromethane	<1.000	50.00	51.08	102	52.84	88	65-135	15	20	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.40	97	50.76	85	25-175	13	20	ug/L	
Toluene	<1.000	50.00	48.29	97	49.99	83	70-130	16	20	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.51	97	50.84	85	50-150	13	20	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.15	98	51.03	85	70-130	14	20	ug/L	
Tetrachloroethylene	<1.000	50.00	49.86	100	51.64	86	70-130	15	20	ug/L	
Dibromochloromethane	<1.000	50.00	48.23	96	49.83	83	70-135	15	20	ug/L	
Chlorobenzene	<1.000	50.00	48.82	98	50.69	84	65-135	15	20	ug/L	
Ethylbenzene	<1.000	50.00	50.45	101	51.98	87	60-140	15	20	ug/L	
Bromoform	<1.000	50.00	48.05	96	50.22	84	70-130	13	20	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.34	95	48.86	81	60-140	16	20	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.79	100	51.82	86	70-130	15	20	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.13	98	50.88	85	65-135	14	20	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.11	100	51.84	86	65-135	15	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Dibromofluoromethane	100		100		100		87-120	%
4-Bromofluorobenzene	100		98		96		85-147	%
Toluene-D8	101		100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 181082 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 01/15/21 14:32

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.70	102	85-115	ug/L	
Lead	40.00	43.38	108	85-115	ug/L	
Nickel	40.00	39.35	98	85-115	ug/L	
Zinc	200	200.8	100	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181082 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 01/15/21 15:34

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.55	99	85-115	ug/L	
Lead	40.00	43.84	110	85-115	ug/L	
Nickel	40.00	38.32	96	85-115	ug/L	
Zinc	200	194.5	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181082 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 01/15/21 16:19

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.58	99	85-115	ug/L	
Lead	40.00	42.79	107	85-115	ug/L	
Nickel	40.00	38.33	96	85-115	ug/L	
Zinc	200	195.6	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181082 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 01/15/21 17:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.49	99	85-115	ug/L	
Lead	40.00	43.74	109	85-115	ug/L	
Nickel	40.00	38.11	95	85-115	ug/L	
Zinc	200	192.9	96	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011305

Analytical Method: EPA 200.8
Seq Number: 181082 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 01/15/21 18:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.29	98	85-115	ug/L	
Lead	40.00	43.38	108	85-115	ug/L	
Nickel	40.00	38.11	95	85-115	ug/L	
Zinc	200	193	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181116 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 01/15/21 18:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.29	98	85-115	ug/L	
Lead	40.00	43.38	108	85-115	ug/L	
Nickel	40.00	38.11	95	85-115	ug/L	
Zinc	200	193	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181116 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 01/15/21 20:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.90	100	85-115	ug/L	
Lead	40.00	41.82	105	85-115	ug/L	
Nickel	40.00	38.83	97	85-115	ug/L	
Zinc	200	198	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181116 Matrix: Water
CCV Sample Id: CCV 7 Analyzed Date: 01/15/21 20:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.09	98	85-115	ug/L	
Lead	40.00	44.65	112	85-115	ug/L	
Nickel	40.00	37.83	95	85-115	ug/L	
Zinc	200	192.6	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 181082 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/15/21 12:40

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	39.43	99	90-110	ug/L	
Lead	40.00	41.39	103	90-110	ug/L	
Nickel	40.00	38.26	96	90-110	ug/L	
Zinc	200	192.8	96	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 181116 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/15/21 12:40

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	39.43	99	90-110	ug/L	
Lead	40.00	41.39	103	90-110	ug/L	
Nickel	40.00	38.26	96	90-110	ug/L	
Zinc	200	192.8	96	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011305

Analytical Method: EPA 624 .1

Seq Number: 181060 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/06/21 16:58

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.04920	98	54-148	mg/L	
Chloromethane	0.05000	0.04746	95	57-135	mg/L	
Vinyl Chloride	0.05000	0.04164	83	64-129	mg/L	
Bromomethane	0.05000	0.04879	98	67-132	mg/L	
Chloroethane	0.05000	0.04852	97	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.04988	100	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.04969	99	67-126	mg/L	
Methylene Chloride	0.05000	0.04889	98	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04828	97	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05026	101	76-127	mg/L	
Chloroform	0.05000	0.04934	99	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05182	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05153	103	73-130	mg/L	
Benzene	0.05000	0.05062	101	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05038	101	77-129	mg/L	
Trichloroethene	0.05000	0.05057	101	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05104	102	74-129	mg/L	
Bromodichloromethane	0.05000	0.05208	104	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.04950	99	76-116	mg/L	
Toluene	0.05000	0.04971	99	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04973	99	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05062	101	78-127	mg/L	
Tetrachloroethylene	0.05000	0.04975	100	78-128	mg/L	
Dibromochloromethane	0.05000	0.04894	98	70-132	mg/L	
Chlorobenzene	0.05000	0.05021	100	72-128	mg/L	
Ethylbenzene	0.05000	0.05185	104	69-131	mg/L	
Bromoform	0.05000	0.04899	98	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05098	102	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05057	101	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05032	101	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05117	102	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 2101130S | PAGE 1 OF 1

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1	3	3								
							Analysis/ Method Required		VOCs (624)	Dissolved metals (200.8)	Total metals + hardness (200.8)	TSS	BOD						
1	Effluent VSP-4	1/13/21	1050	WW	7	G			X	X	X	X	X						

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	1/13/21	1255	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 4.4°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 2.9°-4.2°C

Shipping Carrier: FedEx Client 1/13/21

Special Instructions:
Metals = Cu, Pb, Ni, Zn
Dissolved metals sample filtered at time of collection
Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21011305

Client Name WSP USA - Herndon
Disposal Date 02/17/2021

Received By Thomas Wingate
Date Received 01/13/2021 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.2
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 01/13/2021

PM Review and Approval: Amber Confer Date: 01/13/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011306

January 27, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21011306**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21011306**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 17, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Cathy Thompson
QA Officer

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21011306

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/13/2021 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21011306-001	Effluent VSP-4	WASTE WATER	01/13/21 10:50
21011306-002	Influent VSP-1	GROUND WATER	01/13/21 11:40
21011306-003	TB-011321	WATER	01/13/21 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011306

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/13/2021 10:50** **PSS Sample ID: 21011306-001**
Matrix: WASTE WATER **Date/Time Received: 01/13/2021 12:55**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**13**	ug/L	1.0		1	01/26/21	01/26/21 18:34	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*97*	*%*	*80-120*		*1*	*01/26/21*	*01/26/21 18:34*	*1045*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011306

Sample ID: Influent VSP-1 **Date/Time Sampled: 01/13/2021 11:40** **PSS Sample ID: 21011306-002**
Matrix: GROUND WATER **Date/Time Received: 01/13/2021 12:55**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**130**	ug/L	10		10	01/26/21	01/26/21 17:49	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*10*	*01/26/21*	*01/26/21 17:49*	*1045*

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	01/22/21	01/22/21 13:03	1011
Benzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Bromochloromethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Bromoform	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Bromomethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	01/22/21	01/22/21 13:03	1011
Carbon Disulfide	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Carbon tetrachloride	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Chlorobenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Chloroethane	**3.7**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Chloroform	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Chloromethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Cyclohexane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,1-Dichloroethane	**41**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2-Dichloroethane	**1.3**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,1-Dichloroethene	**190**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011306

Sample ID: Influent VSP-1 **Date/Time Sampled: 01/13/2021 11:40** **PSS Sample ID: 21011306-002**
Matrix: GROUND WATER **Date/Time Received: 01/13/2021 12:55**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Ethylbenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	01/22/21	01/22/21 13:03	1011
Isopropylbenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Methyl Acetate	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Methylcyclohexane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Methylene chloride	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	01/22/21	01/22/21 13:03	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Naphthalene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Styrene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Tetrachloroethene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Toluene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,1,1-Trichloroethane	**16**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Trichloroethene	**1.0**	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
Vinyl chloride	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011
m&p-Xylene	ND	ug/L	2.0		1	01/22/21	01/22/21 13:03	1011
o-Xylene	ND	ug/L	1.0		1	01/22/21	01/22/21 13:03	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*97*	*%*	*88-112*		*1*	*01/22/21*	*01/22/21 13:03*	*1011*
Dibromofluoromethane	*101*	*%*	*93-111*		*1*	*01/22/21*	*01/22/21 13:03*	*1011*
Toluene-D8	*100*	*%*	*94-107*		*1*	*01/22/21*	*01/22/21 13:03*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011306

Sample ID: TB-011321 **Date/Time Sampled: 01/13/2021 00:00** **PSS Sample ID: 21011306-003**
Matrix: WATER **Date/Time Received: 01/13/2021 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Chloromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Vinyl Chloride	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Bromomethane	**1.2**	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Chloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Methylene Chloride	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Chloroform	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Benzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Trichloroethene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Toluene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Tetrachloroethylene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Chlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Ethylbenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
Bromoform	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/14/21	01/14/21 11:00	1011

Surrogate(s)	***Recovery***		***Limits***				
Dibromofluoromethane	*101*	*%*	*87-120*		*1*	*01/14/21*	*01/14/21 11:00*	*1011*
4-Bromofluorobenzene	*100*	*%*	*85-147*		*1*	*01/14/21*	*01/14/21 11:00*	*1011*
Toluene-D8	*101*	*%*	*88-110*		*1*	*01/14/21*	*01/14/21 11:00*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21011306

Sample ID: TB-011321 **Date/Time Sampled: 01/13/2021 00:00** **PSS Sample ID: 21011306-003**
Matrix: WATER **Date/Time Received: 01/13/2021 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	01/26/21	01/26/21 17:04	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*99*	*%*	*80-120*		*1*	*01/26/21*	*01/26/21 17:04*	*1045*

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Project Name: Kop-Flex

PSS Project No.: 21011306

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21011306

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-011321	Initial	21011306-003	W	84575	181072	01/14/2021 07:53	01/14/2021 11:00
	84575-1-BKS	BKS	84575-1-BKS	W	84575	181072	01/14/2021 07:53	01/14/2021 08:26
	84575-1-BLK	BLK	84575-1-BLK	W	84575	181072	01/14/2021 07:53	01/14/2021 10:37
	84575-1-BSD	BSD	84575-1-BSD	W	84575	181072	01/14/2021 07:53	01/14/2021 08:58
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21011306-001	W	84686	181377	01/26/2021 10:53	01/26/2021 18:34
	Influent VSP-1	Initial	21011306-002	W	84686	181377	01/26/2021 10:53	01/26/2021 17:49
	TB-011321	Initial	21011306-003	W	84686	181377	01/26/2021 10:53	01/26/2021 17:04
	84686-1-BKS	BKS	84686-1-BKS	W	84686	181377	01/26/2021 10:53	01/26/2021 15:10
	84686-1-BLK	BLK	84686-1-BLK	W	84686	181377	01/26/2021 10:53	01/26/2021 16:42
	84686-1-BSD	BSD	84686-1-BSD	W	84686	181377	01/26/2021 10:53	01/26/2021 15:33
SW-846 8260 D	Influent VSP-1	Initial	21011306-002	W	84657	181307	01/22/2021 07:26	01/22/2021 13:03
	84657-1-BKS	BKS	84657-1-BKS	W	84657	181307	01/22/2021 07:26	01/22/2021 08:27
	84657-1-BLK	BLK	84657-1-BLK	W	84657	181307	01/22/2021 07:26	01/22/2021 09:57
	GTA-B1 S	MS	21012003-006 S	W	84657	181307	01/22/2021 07:26	01/22/2021 14:11
	GTA-B1 SD	MSD	21012003-006 S	W	84657	181307	01/22/2021 07:26	01/22/2021 14:34

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011306

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 181072 Matrix: Water Date Prep: 01/14/21
MB Sample Id: 84575-1-BLK LCS Sample Id: 84575-1-BKS LCSD Sample Id: 84575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	55.63	111	56.86	95	54-148	16	20	ug/L	
Chloromethane	<1.000	50.00	47.55	95	48.69	97	1-205	2	20	ug/L	
Vinyl Chloride	<1.000	50.00	54.36	109	56.78	95	5-195	14	20	ug/L	
Bromomethane	<1.000	50.00	48.52	97	50.25	84	15-185	14	20	ug/L	
Chloroethane	<1.000	50.00	47.72	95	48.57	97	40-160	2	20	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.26	105	52.67	88	50-150	18	20	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.93	98	50.20	84	50-150	15	20	ug/L	
Methylene Chloride	<1.000	50.00	48.37	97	49.84	83	60-140	16	20	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.81	94	48.13	80	70-130	16	20	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.96	98	50.60	84	70-130	15	20	ug/L	
Chloroform	<1.000	50.00	47.69	95	49.33	99	70-135	4	20	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	50.31	101	52.00	87	70-130	15	20	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.48	101	51.77	86	70-130	16	20	ug/L	
Benzene	<1.000	50.00	49.13	98	50.72	85	65-135	14	20	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.77	98	50.04	83	70-130	17	20	ug/L	
Trichloroethene	<1.000	50.00	49.13	98	51.17	85	65-135	14	20	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.65	99	51.38	86	35-165	14	20	ug/L	
Bromodichloromethane	<1.000	50.00	51.08	102	52.84	88	65-135	15	20	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.40	97	50.76	85	25-175	13	20	ug/L	
Toluene	<1.000	50.00	48.29	97	49.99	83	70-130	16	20	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.51	97	50.84	85	50-150	13	20	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.15	98	51.03	85	70-130	14	20	ug/L	
Tetrachloroethylene	<1.000	50.00	49.86	100	51.64	86	70-130	15	20	ug/L	
Dibromochloromethane	<1.000	50.00	48.23	96	49.83	83	70-135	15	20	ug/L	
Chlorobenzene	<1.000	50.00	48.82	98	50.69	84	65-135	15	20	ug/L	
Ethylbenzene	<1.000	50.00	50.45	101	51.98	87	60-140	15	20	ug/L	
Bromoform	<1.000	50.00	48.05	96	50.22	84	70-130	13	20	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.34	95	48.86	81	60-140	16	20	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.79	100	51.82	86	70-130	15	20	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.13	98	50.88	85	65-135	14	20	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.11	100	51.84	86	65-135	15	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Dibromofluoromethane	100		100		100		87-120	%
4-Bromofluorobenzene	100		98		96		85-147	%
Toluene-D8	101		100		100		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 181377 Matrix: Water Date Prep: 01/26/21
MB Sample Id: 84686-1-BLK LCS Sample Id: 84686-1-BKS LCSD Sample Id: 84686-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	34.02	113	33.57	112	50-150	1	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	98		100		100		80-120	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011306

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 181307
Matrix: Water
Date Prep: 01/22/21
MB Sample Id: 84657-1-BLK
LCS Sample Id: 84657-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	48.67	97	26-128	ug/L	
Benzene	<1.000	50.00	50.41	101	82-115	ug/L	
Bromochloromethane	<1.000	50.00	53.67	107	91-115	ug/L	
Bromodichloromethane	<1.000	50.00	51.74	103	88-122	ug/L	
Bromoform	<1.000	50.00	52.04	104	79-122	ug/L	
Bromomethane	<1.000	50.00	47.18	94	50-143	ug/L	
2-Butanone (MEK)	<5.000	50.00	53.40	107	51-113	ug/L	
Carbon Disulfide	<1.000	50.00	47.25	95	71-132	ug/L	
Carbon tetrachloride	<1.000	50.00	51.64	103	85-125	ug/L	
Chlorobenzene	<1.000	50.00	52.06	104	80-116	ug/L	
Chloroethane	<1.000	50.00	44.14	88	58-115	ug/L	
Chloroform	<1.000	50.00	48.51	97	81-113	ug/L	
Chloromethane	<1.000	50.00	40.21	80	48-132	ug/L	
Cyclohexane	<1.000	50.00	51.11	102	81-125	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	47.58	95	63-122	ug/L	
Dibromochloromethane	<1.000	50.00	50.80	102	84-120	ug/L	
1,2-Dibromoethane	<1.000	50.00	52.72	105	82-122	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	55.27	111	79-122	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	55.24	110	79-122	ug/L	
Dichlorodifluoromethane	<1.000	50.00	49.65	99	73-126	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	54.42	109	79-119	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.95	98	70-121	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.06	96	78-118	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	51.73	103	76-116	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.46	97	71-124	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.39	99	79-121	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.50	99	83-123	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	49.44	99	82-125	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	47.64	95	74-118	ug/L	
Ethylbenzene	<1.000	50.00	52.87	106	85-120	ug/L	
2-Hexanone (MBK)	<5.000	50.00	54.08	108	51-126	ug/L	
Isopropylbenzene	<1.000	50.00	54.36	109	84-125	ug/L	
Methyl Acetate	<1.000	50.00	42.61	85	75-114	ug/L	
Methylcyclohexane	<1.000	50.00	54.02	108	88-124	ug/L	
Methylene chloride	<1.000	50.00	47.06	94	70-117	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	49.16	98	63-112	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	46.41	93	70-127	ug/L	
Naphthalene	<1.000	50.00	62.18	124	71-138	ug/L	
Styrene	<1.000	50.00	51.28	103	78-121	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.93	100	70-118	ug/L	
Tetrachloroethene	<1.000	50.00	54.24	108	83-113	ug/L	
Toluene	<1.000	50.00	50.21	100	85-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	60.15	120	80-134	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	60.72	121	83-134	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.22	102	84-122	ug/L	
Trichloroethene	<1.000	50.00	51.37	103	82-117	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.77	102	82-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	51.96	104	71-123	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	50.12	100	72-126	ug/L	
Vinyl chloride	<1.000	50.00	52.09	104	75-113	ug/L	
m&p-Xylene	<2.000	100	106.6	107	87-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011306

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 181307
Matrix: Water
Date Prep: 01/22/21
MB Sample Id: 84657-1-BLK
LCS Sample Id: 84657-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	53.36	107	87-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	96		95		88-112	%
Dibromofluoromethane	100		99		93-111	%
Toluene-D8	100		100		94-107	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 181060 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/06/21 16:58

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.04920	98	54-148	mg/L	
Chloromethane	0.05000	0.04746	95	57-135	mg/L	
Vinyl Chloride	0.05000	0.04164	83	64-129	mg/L	
Bromomethane	0.05000	0.04879	98	67-132	mg/L	
Chloroethane	0.05000	0.04852	97	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.04988	100	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.04969	99	67-126	mg/L	
Methylene Chloride	0.05000	0.04889	98	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04828	97	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05026	101	76-127	mg/L	
Chloroform	0.05000	0.04934	99	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05182	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05153	103	73-130	mg/L	
Benzene	0.05000	0.05062	101	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05038	101	77-129	mg/L	
Trichloroethene	0.05000	0.05057	101	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05104	102	74-129	mg/L	
Bromodichloromethane	0.05000	0.05208	104	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.04950	99	76-116	mg/L	
Toluene	0.05000	0.04971	99	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04973	99	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05062	101	78-127	mg/L	
Tetrachloroethylene	0.05000	0.04975	100	78-128	mg/L	
Dibromochloromethane	0.05000	0.04894	98	70-132	mg/L	
Chlorobenzene	0.05000	0.05021	100	72-128	mg/L	
Ethylbenzene	0.05000	0.05185	104	69-131	mg/L	
Bromoform	0.05000	0.04899	98	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05098	102	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05057	101	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05032	101	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05117	102	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 181377 Matrix: Water
Parent Sample Id: ICV, 1,4-DIOXANE-1 ICV Sample Id: ICV, 1,4-DIOXANE-1 Analyzed Date: 01/26/21 14:48

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	33.04	110	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 181307 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 01/22/21 07:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	50.76	102	80-120	ug/L	
Benzene	50.00	49.49	99	80-120	ug/L	
Bromochloromethane	50.00	52.60	105	80-120	ug/L	
Bromodichloromethane	50.00	51.40	103	80-120	ug/L	
Bromoform	50.00	50.55	101	80-120	ug/L	
Bromomethane	50.00	47.54	95	80-120	ug/L	
2-Butanone (MEK)	50.00	54.60	109	80-120	ug/L	
Carbon Disulfide	50.00	45.85	92	80-120	ug/L	
Carbon tetrachloride	50.00	49.14	98	80-120	ug/L	
Chlorobenzene	50.00	50.19	100	80-120	ug/L	
Chloroethane	50.00	44.72	89	80-120	ug/L	
Chloroform	50.00	48.13	96	80-120	ug/L	
Chloromethane	50.00	41.55	83	80-120	ug/L	
Cyclohexane	50.00	48.90	98	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	44.73	89	80-120	ug/L	
Dibromochloromethane	50.00	49.26	99	80-120	ug/L	
1,2-Dibromoethane	50.00	51.00	102	80-120	ug/L	
1,2-Dichlorobenzene	50.00	51.70	103	80-120	ug/L	
1,3-Dichlorobenzene	50.00	51.10	102	80-120	ug/L	
Dichlorodifluoromethane	50.00	49.10	98	80-120	ug/L	
1,4-Dichlorobenzene	50.00	50.62	101	80-120	ug/L	
1,1-Dichloroethane	50.00	43.58	87	80-120	ug/L	
1,2-Dichloroethane	50.00	48.00	96	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	50.82	102	80-120	ug/L	
1,1-Dichloroethene	50.00	47.15	94	80-120	ug/L	
1,2-Dichloropropane	50.00	48.88	98	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	48.13	96	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	48.41	97	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	45.81	92	80-120	ug/L	
Ethylbenzene	50.00	50.65	101	80-120	ug/L	
2-Hexanone (MBK)	50.00	54.43	109	80-120	ug/L	
Isopropylbenzene	50.00	49.97	100	80-120	ug/L	
Methyl Acetate	50.00	43.74	87	80-120	ug/L	
Methylcyclohexane	50.00	51.60	103	80-120	ug/L	
Methylene chloride	50.00	47.07	94	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	48.96	98	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	45.16	90	80-120	ug/L	
Naphthalene	50.00	56.38	113	80-120	ug/L	
Styrene	50.00	49.22	98	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	47.24	94	80-120	ug/L	
Tetrachloroethene	50.00	51.86	104	80-120	ug/L	
Toluene	50.00	49.40	99	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	56.15	112	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	56.29	113	80-120	ug/L	
1,1,1-Trichloroethane	50.00	48.85	98	80-120	ug/L	
Trichloroethene	50.00	49.77	100	80-120	ug/L	
1,1,2-Trichloroethane	50.00	50.77	102	80-120	ug/L	
Trichlorofluoromethane	50.00	50.23	100	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	48.17	96	80-120	ug/L	
Vinyl chloride	50.00	41.89	84	80-120	ug/L	
m&p-Xylene	100	102.5	103	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011306

Analytical Method: SW-846 8260 D

Seq Number: 181307 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 01/22/21 07:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	51.42	103	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	93	80-120	%	
Dibromofluoromethane	100	80-120	%	
Toluene-D8	101	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011306

Analytical Method: SW-846 8260 D

Seq Number: 181275 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/06/21 16:58

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	42.71	85	75-125	ug/L	
Benzene	50.00	50.62	101	75-125	ug/L	
Bromochloromethane	50.00	51.25	103	75-125	ug/L	
Bromodichloromethane	50.00	52.08	104	75-125	ug/L	
Bromoform	50.00	48.99	98	75-125	ug/L	
Bromomethane	50.00	48.79	98	75-125	ug/L	
2-Butanone (MEK)	50.00	46.73	93	75-125	ug/L	
Carbon Disulfide	50.00	50.85	102	75-125	ug/L	
Carbon tetrachloride	50.00	51.53	103	75-125	ug/L	
Chlorobenzene	50.00	50.21	100	75-125	ug/L	
Chloroethane	50.00	48.52	97	75-125	ug/L	
Chloroform	50.00	49.34	99	75-125	ug/L	
Chloromethane	50.00	47.46	95	75-125	ug/L	
Cyclohexane	50.00	52.11	104	75-125	ug/L	
1,2-Dibromo-3-chloropropane	50.00	49.77	100	75-125	ug/L	
Dibromochloromethane	50.00	53.28	107	75-125	ug/L	
1,2-Dibromoethane	50.00	52.36	105	75-125	ug/L	
1,2-Dichlorobenzene	50.00	51.17	102	75-125	ug/L	
1,3-Dichlorobenzene	50.00	50.57	101	75-125	ug/L	
Dichlorodifluoromethane	50.00	49.20	98	75-125	ug/L	
1,4-Dichlorobenzene	50.00	50.32	101	75-125	ug/L	
1,1-Dichloroethane	50.00	50.26	101	75-125	ug/L	
1,2-Dichloroethane	50.00	50.38	101	75-125	ug/L	
cis-1,2-Dichloroethene	50.00	51.03	102	75-125	ug/L	
1,1-Dichloroethene	50.00	49.69	99	75-125	ug/L	
1,2-Dichloropropane	50.00	51.04	102	75-125	ug/L	
cis-1,3-Dichloropropene	50.00	54.92	110	75-125	ug/L	
trans-1,3-Dichloropropene	50.00	49.73	99	75-125	ug/L	
trans-1,2-Dichloroethene	50.00	48.28	97	75-125	ug/L	
Ethylbenzene	50.00	51.85	104	75-125	ug/L	
2-Hexanone (MBK)	50.00	49.63	99	75-125	ug/L	
Isopropylbenzene	50.00	53.03	106	75-125	ug/L	
Methyl Acetate	50.00	53.95	108	75-125	ug/L	
Methylcyclohexane	50.00	51.61	103	75-125	ug/L	
Methylene chloride	50.00	48.89	98	75-125	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.29	107	75-125	ug/L	
Methyl-t-Butyl Ether	50.00	51.75	104	75-125	ug/L	
Naphthalene	50.00	55.12	110	75-125	ug/L	
Styrene	50.00	53.52	107	75-125	ug/L	
1,1,2,2-Tetrachloroethane	50.00	50.98	102	75-125	ug/L	
Tetrachloroethene	50.00	49.75	100	75-125	ug/L	
Toluene	50.00	49.71	99	75-125	ug/L	
1,2,3-Trichlorobenzene	50.00	55.55	111	75-125	ug/L	
1,2,4-Trichlorobenzene	50.00	54.91	110	75-125	ug/L	
1,1,1-Trichloroethane	50.00	51.82	104	75-125	ug/L	
Trichloroethene	50.00	50.57	101	75-125	ug/L	
1,1,2-Trichloroethane	50.00	50.62	101	75-125	ug/L	
Trichlorofluoromethane	50.00	49.88	100	75-125	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	49.61	99	75-125	ug/L	
Vinyl chloride	50.00	39.28	79	75-125	ug/L	
m&p-Xylene	100	103.2	103	75-125	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21011306

Analytical Method: SW-846 8260 D

Seq Number: 181275 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/06/21 16:58

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	51.73	103	75-125	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	75-125	%	
Dibromofluoromethane	101	75-125	%	
Toluene-D8	100	75-125	%	

X = Recovery outside of QC Criteria

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All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21011306 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1,4-dioxane (8260B SIM)	VOCs (8260B)	VOCs (624)								Preservative Codes
							1	1	1									1 - HCL 2 - H_2SO_4 3 - HNO_3 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit
1	Effluent VSP-4	1/13/21	1050	WW	3	G	X											
2	Influent VSP-1	1/13/21	1140	GW	6	G	X	X										
3	TB-011321	1/13/21	—	W	4	—	X		X									Trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
Dan Bruce	1/13/21	1255	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TD: 4.4°C

Custody Seal: Cooler: Intact

Coolers: ~~PRES~~ 1 Temp: 3.1, 3.2

Shipping Carrier: CLMT

Special Instructions:
Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21011306

Client Name WSP USA - Herndon
Disposal Date 02/17/2021

Received By Thomas Wingate
Date Received 01/13/2021 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	3.8
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 01/13/2021

PM Review and Approval: Amber Confer Date: 01/13/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020925

February 23, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21020925**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21020925**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 16, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21020925

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/09/2021 at 01:05 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21020925-001	Effluent VSP-4	WASTE WATER	02/09/21 12:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020925

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020925-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2021 13:05**

Dissolved Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.4**	ug/L	1.0		1	02/10/21	02/11/21 23:36	1064
Lead	ND	ug/L	1.0		1	02/10/21	02/10/21 22:01	1064
Nickel	**7.9**	ug/L	1.0		1	02/10/21	02/11/21 23:36	1064
Zinc	ND	ug/L	20		1	02/10/21	02/10/21 22:01	1064

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**4.7**	ug/L	1.0		1	02/10/21	02/11/21 22:12	1064
Lead	ND	ug/L	1.0		1	02/10/21	02/10/21 19:27	1064
Nickel	**8.2**	ug/L	1.0		1	02/10/21	02/11/21 22:12	1064
Zinc	**20.8**	ug/L	20.0		1	02/10/21	02/10/21 19:27	1064

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 181830 on Case Narrative.
pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Chloromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Vinyl Chloride	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Bromomethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Chloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Methylene Chloride	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Chloroform	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Benzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Trichloroethene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Bromodichloromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020925

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020925-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2021 13:05**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 181830 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Toluene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Tetrachloroethylene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Dibromochloromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Chlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Ethylbenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
Bromoform	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:16	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*101*	*%*	*87-120*		*1*	*02/12/21*	*02/12/21 19:16*	*1011*
4-Bromofluorobenzene	*101*	*%*	*85-147*		*1*	*02/12/21*	*02/12/21 19:16*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*02/12/21*	*02/12/21 19:16*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**21**	mg/L	0.66		1	02/10/21	02/15/21 20:56	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	**1.1**	mg/L	1.0		1	02/10/21	02/10/21 11:52	1061

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020925

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020925-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2021 13:05**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 10-Feb-21 15:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		02/15/21	02/15/21 14:55	4005

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Project Name: Kop-Flex

PSS Project No.: 21020925

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21020925: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

General Comments:
Hardness added, per client.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 181830
Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.15ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21020925

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21020925-001	W	84852	181746	02/10/2021 10:53	02/10/2021 19:27
	84852-1-BKS	BKS	84852-1-BKS	W	84852	181746	02/10/2021 10:54	02/10/2021 18:03
	84852-1-BLK	BLK	84852-1-BLK	W	84852	181746	02/10/2021 10:54	02/10/2021 17:58
	020301 S	MS	21020501-001 S	W	84852	181746	02/10/2021 10:54	02/10/2021 18:12
	20210209-004 S	MS	21020928-002 S	W	84852	181746	02/10/2021 10:54	02/10/2021 20:00
	020301 SD	MSD	21020501-001 S	W	84852	181746	02/10/2021 10:54	02/10/2021 18:17
	84852-1-BKS	Reanalysis	84852-1-BKS	W	84852	181791	02/10/2021 10:54	02/11/2021 20:58
	84852-1-BLK	Reanalysis	84852-1-BLK	W	84852	181791	02/10/2021 10:54	02/11/2021 20:54
	Effluent VSP-4	Reanalysis	21020925-001	W	84852	181791	02/10/2021 10:53	02/11/2021 22:12
EPA 200.8	Effluent VSP-4	Initial	21020925-001	W	84863	181753	02/10/2021 16:14	02/10/2021 22:01
	84863-1-BKS	BKS	84863-1-BKS	W	84863	181753	02/10/2021 16:14	02/10/2021 21:19
	84863-1-BLK	BLK	84863-1-BLK	W	84863	181753	02/10/2021 16:14	02/10/2021 21:14
	Millville 001 S	MS	21020921-001 S	W	84863	181753	02/10/2021 16:14	02/10/2021 21:28
	Millville 001 SD	MSD	21020921-001 S	W	84863	181753	02/10/2021 16:14	02/10/2021 21:33
	84863-1-BKS	Reanalysis	84863-1-BKS	W	84863	181794	02/10/2021 16:14	02/11/2021 23:31
	84863-1-BLK	Reanalysis	84863-1-BLK	W	84863	181794	02/10/2021 16:14	02/11/2021 23:27
	Effluent VSP-4	Reanalysis	21020925-001	W	84863	181794	02/10/2021 16:14	02/11/2021 23:36
EPA 624 .1	Effluent VSP-4	Initial	21020925-001	W	84918	181830	02/12/2021 09:07	02/12/2021 19:16
	84918-1-BKS	BKS	84918-1-BKS	W	84918	181830	02/12/2021 09:07	02/12/2021 09:40
	84918-1-BLK	BLK	84918-1-BLK	W	84918	181830	02/12/2021 09:07	02/12/2021 11:18
	20210209g S	MS	21021005-001 S	W	84918	181830	02/12/2021 09:07	02/12/2021 15:52
	20210209g SD	MSD	21021005-001 S	W	84918	181830	02/12/2021 09:07	02/12/2021 16:14
SM 2340B	Effluent VSP-4	Initial	21020925-001	W	84935	181896	02/10/2021 10:54	02/15/2021 20:56
SM 2540D -2011	Effluent VSP-4	Initial	21020925-001	W	181701	181701	02/10/2021 11:52	02/10/2021 11:52
	181701-1-BKS	BKS	181701-1-BKS	W	181701	181701	02/10/2021 11:52	02/10/2021 11:52
	181701-1-BLK	BLK	181701-1-BLK	W	181701	181701	02/10/2021 11:52	02/10/2021 11:52
	Millville 001 D	MD	21020921-001 D	W	181701	181701	02/10/2021 11:52	02/10/2021 11:52
SM 5210B -2011	Effluent VSP-4	Initial	21020925-001	W	182032	182032	02/15/2021 14:55	02/15/2021 14:55

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21020925

Analytical Method: SM 2540D -2011
Seq Number: 181701 Matrix: Water
MB Sample Id: 181701-1-BLK LCS Sample Id: 181701-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	100.2	96.50	96	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181746 Matrix: Water Date Prep: 02/10/21
MB Sample Id: 84852-1-BLK LCS Sample Id: 84852-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	37.42	94	85-115	ug/L	
Zinc	<20.00	200	178.9	89	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181791 Matrix: Water Date Prep: 02/10/21
MB Sample Id: 84852-1-BLK LCS Sample Id: 84852-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.14	103	85-115	ug/L	
Nickel	<1.000	40.00	39.34	98	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181753 Matrix: Water Date Prep: 02/10/21
MB Sample Id: 84863-1-BLK LCS Sample Id: 84863-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	38.36	96	85-115	ug/L	
Zinc	<20.00	200	195	98	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 181794 Matrix: Water Date Prep: 02/10/21
MB Sample Id: 84863-1-BLK LCS Sample Id: 84863-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.45	101	85-115	ug/L	
Nickel	<1.000	40.00	40.35	101	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21020925

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 181830
Matrix: Water
Date Prep: 02/12/21
MB Sample Id: 84918-1-BLK
LCS Sample Id: 84918-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	52.08	104	54-148	ug/L	
Chloromethane	<1.000	50.00	53.40	107	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	55.95	112	5-195	ug/L	
Bromomethane	<1.000	50.00	46.88	94	15-185	ug/L	
Chloroethane	<1.000	50.00	48.81	98	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.47	105	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.61	101	50-150	ug/L	
Methylene Chloride	<1.000	50.00	50.73	101	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.23	92	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.75	88	70-130	ug/L	
Chloroform	<1.000	50.00	46.20	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	50.29	101	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.56	101	70-130	ug/L	
Benzene	<1.000	50.00	49.72	99	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.22	98	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.07	100	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.83	102	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	50.30	101	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.74	107	25-175	ug/L	
Toluene	<1.000	50.00	48.34	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	54.15	108	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.91	98	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	49.93	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	51.26	103	70-135	ug/L	
Chlorobenzene	<1.000	50.00	49.20	98	65-135	ug/L	
Ethylbenzene	<1.000	50.00	51.18	102	60-140	ug/L	
Bromoform	<1.000	50.00	51.24	102	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.60	95	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.38	99	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.88	98	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.61	99	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		100		87-120	%
4-Bromofluorobenzene	101		98		85-147	%
Toluene-D8	101		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 02/10/21 18:49

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	40.59	101	85-115	ug/L	
Zinc	200	194	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/10/21 19:50

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	40.60	102	85-115	ug/L	
Zinc	200	189.3	95	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/10/21 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	39.04	98	85-115	ug/L	
Zinc	200	194.2	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181753 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/10/21 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	39.04	98	85-115	ug/L	
Zinc	200	194.2	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181753 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 02/10/21 21:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	39.23	98	85-115	ug/L	
Zinc	200	190.2	95	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181753 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 02/10/21 22:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	39.62	99	85-115	ug/L	
Zinc	200	200.8	100	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181791 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 02/11/21 21:44

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.70	104	85-115	ug/L	
Nickel	40.00	41.27	103	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181791 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/11/21 22:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.01	103	85-115	ug/L	
Nickel	40.00	40.76	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181794 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/11/21 22:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.01	103	85-115	ug/L	
Nickel	40.00	40.76	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181794 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/11/21 23:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.41	104	85-115	ug/L	
Nickel	40.00	41.32	103	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181794 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 02/12/21 00:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.53	101	85-115	ug/L	
Nickel	40.00	40.92	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/10/21 17:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	40.00	40.28	101	90-110	ug/L	
Zinc	200	192.3	96	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181753 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/10/21 17:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	40.00	40.28	101	90-110	ug/L	
Zinc	200	192.3	96	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181791 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/11/21 20:26

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	42.86	107	90-110	ug/L	
Nickel	40.00	41.40	104	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181794 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/11/21 20:26

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	42.86	107	90-110	ug/L	
Nickel	40.00	41.40	104	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21020925

Analytical Method: EPA 624 .1

Seq Number: 181732 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 02/10/21 14:33

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.04980	100	54-148	mg/L	
Chloromethane	0.05000	0.05013	100	57-135	mg/L	
Vinyl Chloride	0.05000	0.04629	93	64-129	mg/L	
Bromomethane	0.05000	0.05126	103	67-132	mg/L	
Chloroethane	0.05000	0.04798	96	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05019	100	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05088	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04998	100	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05517	110	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05233	105	76-127	mg/L	
Chloroform	0.05000	0.04812	96	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05277	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05238	105	73-130	mg/L	
Benzene	0.05000	0.05117	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05058	101	77-129	mg/L	
Trichloroethene	0.05000	0.05178	104	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05157	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05214	104	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05589	112	76-116	mg/L	
Toluene	0.05000	0.05020	100	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05635	113	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05049	101	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05154	103	78-128	mg/L	
Dibromochloromethane	0.05000	0.05453	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05175	104	72-128	mg/L	
Ethylbenzene	0.05000	0.05345	107	69-131	mg/L	
Bromoform	0.05000	0.05486	110	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05261	105	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05420	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05364	107	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05430	109	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21020925 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservatives Use Codes: 1 | 3 | 3

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (EPA 624)	Total metals (200.8)	Dissolved metals (200.8)	TSS	BOD
1	Effluent VSP-4	2/9/21	1210	WW	7	G	X	X	X	X	X

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	2/9/21	1305	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB = 1.8°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 3.6° 5.6°C

Shipping Carrier: CLT

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21020925

Client Name WSP USA - Herndon
Disposal Date 03/16/2021

Received By Thomas Wingate
Date Received 02/09/2021 01:05:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	5.6
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 02/09/2021

PM Review and Approval: Amber Confer Date: 02/09/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020926

February 23, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21020926**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21020926**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 16, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21020926

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/09/2021 at 01:05 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21020926-001	Effluent VSP-4	WASTE WATER	02/09/21 12:10
21020926-002	TB-020921	WATER	02/09/21 12:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020926

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020926-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2021 13:05**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**1.1**	ug/L	1.0		1	02/23/21	02/23/21 12:38	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*02/23/21*	*02/23/21 12:38*	*1045*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020926

Sample ID: TB-020921 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020926-002**
Matrix: WATER **Date/Time Received: 02/09/2021 13:05**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 181830 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Chloromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Vinyl Chloride	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Bromomethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Chloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Methylene Chloride	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Chloroform	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Benzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Trichloroethene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Bromodichloromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Toluene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Tetrachloroethylene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Dibromochloromethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Chlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Ethylbenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
Bromoform	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	02/12/21	02/12/21 19:38	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*102*	*%*	*87-120*	*1*	*02/12/21*	*02/12/21 19:38*	*1011*
4-Bromofluorobenzene	*101*	*%*	*85-147*	*1*	*02/12/21*	*02/12/21 19:38*	*1011*
Toluene-D8	*101*	*%*	*88-110*	*1*	*02/12/21*	*02/12/21 19:38*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020926

Sample ID: TB-020921 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020926-002**
Matrix: WATER **Date/Time Received: 02/09/2021 13:05**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	02/23/21	02/23/21 13:01	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*102*	*%*	*80-120*		*1*	*02/23/21*	*02/23/21 13:01*	*1045*

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Project Name: Kop-Flex

PSS Project No.: 21020926

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 181830

Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.15ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21020926

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-020921	Initial	21020926-002	W	84918	181830	02/12/2021 09:07	02/12/2021 19:38
	84918-1-BKS	BKS	84918-1-BKS	W	84918	181830	02/12/2021 09:07	02/12/2021 09:40
	84918-1-BLK	BLK	84918-1-BLK	W	84918	181830	02/12/2021 09:07	02/12/2021 11:18
	20210209g S	MS	21021005-001 S	W	84918	181830	02/12/2021 09:07	02/12/2021 15:52
	20210209g SD	MSD	21021005-001 S	W	84918	181830	02/12/2021 09:07	02/12/2021 16:14
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21020926-001	W	85037	182062	02/23/2021 07:53	02/23/2021 12:38
	TB-020921	Initial	21020926-002	W	85037	182062	02/23/2021 07:53	02/23/2021 13:01
	85037-1-BKS	BKS	85037-1-BKS	W	85037	182062	02/23/2021 07:53	02/23/2021 08:42
	85037-1-BLK	BLK	85037-1-BLK	W	85037	182062	02/23/2021 07:53	02/23/2021 10:14
	85037-1-BSD	BSD	85037-1-BSD	W	85037	182062	02/23/2021 07:53	02/23/2021 09:04

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21020926

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 181830 Matrix: Water Date Prep: 02/12/21
MB Sample Id: 84918-1-BLK LCS Sample Id: 84918-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	52.08	104	54-148	ug/L	
Chloromethane	<1.000	50.00	53.40	107	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	55.95	112	5-195	ug/L	
Bromomethane	<1.000	50.00	46.88	94	15-185	ug/L	
Chloroethane	<1.000	50.00	48.81	98	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.47	105	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.61	101	50-150	ug/L	
Methylene Chloride	<1.000	50.00	50.73	101	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.23	92	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.75	88	70-130	ug/L	
Chloroform	<1.000	50.00	46.20	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	50.29	101	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.56	101	70-130	ug/L	
Benzene	<1.000	50.00	49.72	99	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.22	98	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.07	100	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.83	102	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	50.30	101	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.74	107	25-175	ug/L	
Toluene	<1.000	50.00	48.34	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	54.15	108	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.91	98	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	49.93	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	51.26	103	70-135	ug/L	
Chlorobenzene	<1.000	50.00	49.20	98	65-135	ug/L	
Ethylbenzene	<1.000	50.00	51.18	102	60-140	ug/L	
Bromoform	<1.000	50.00	51.24	102	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.60	95	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.38	99	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.88	98	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.61	99	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		100		87-120	%
4-Bromofluorobenzene	101		98		85-147	%
Toluene-D8	101		100		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 182062 Matrix: Water Date Prep: 02/23/21
MB Sample Id: 85037-1-BLK LCS Sample Id: 85037-1-BKS LCSD Sample Id: 85037-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	32.21	107	34.04	113	50-150	5	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	101		103		102		80-120	%

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Project Name Kop-Flex
PSS Project No.: 21020926

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 181732 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 02/10/21 14:33

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.04980	100	54-148	mg/L	
Chloromethane	0.05000	0.05013	100	57-135	mg/L	
Vinyl Chloride	0.05000	0.04629	93	64-129	mg/L	
Bromomethane	0.05000	0.05126	103	67-132	mg/L	
Chloroethane	0.05000	0.04798	96	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05019	100	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05088	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04998	100	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05517	110	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05233	105	76-127	mg/L	
Chloroform	0.05000	0.04812	96	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05277	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05238	105	73-130	mg/L	
Benzene	0.05000	0.05117	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05058	101	77-129	mg/L	
Trichloroethene	0.05000	0.05178	104	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05157	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05214	104	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05589	112	76-116	mg/L	
Toluene	0.05000	0.05020	100	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05635	113	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05049	101	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05154	103	78-128	mg/L	
Dibromochloromethane	0.05000	0.05453	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05175	104	72-128	mg/L	
Ethylbenzene	0.05000	0.05345	107	69-131	mg/L	
Bromoform	0.05000	0.05486	110	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05261	105	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05420	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05364	107	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05430	109	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	99	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 182062 Matrix: Water

CCV Sample Id: CCV, VOC-1 Analyzed Date: 02/23/21 08:19

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.00	103	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	103	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21020926

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21020926 | PAGE 1 OF 1

BILL TO (if different): ~~Eric Joh~~ | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannan Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservatives Use Codes: 1 | 1

Analysis/Method Required ③: 1,4-dioxane (SIM) | VOCs (624)

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

②

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	1,4-dioxane (SIM)	VOCs (624)	
1	Effluent VSP-4	2/9/21	1210	WW	3	G	X		
2	TB-020921				4	—	X	X	Trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
Alex Burke	2/9/21	1305	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 1.8°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 3.8-4.1°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21020926

Client Name WSP USA - Herndon
Disposal Date 03/16/2021

Received By Thomas Wingate
Date Received 02/09/2021 01:05:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.1
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 02/09/2021

PM Review and Approval: Amber Confer Date: 02/09/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020927

February 23, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21020927**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21020927**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 16, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21020927

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/09/2021 at 01:05 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21020927-001	Effluent VSP-4	WASTE WATER	02/09/21 12:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21020927

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2021 12:10** **PSS Sample ID: 21020927-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2021 13:05**

Total Manganese — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Manganese	**32.9**	ug/L	1.00		1	02/10/21	02/10/21 19:31	1064

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

February 16, 2021

Amber Confer
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228

RE: Project: 21020927
Pace Project No.: 30405508

Dear Amber Confer:

Enclosed are the analytical results for sample(s) received by the laboratory on February 10, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

David A. Pichette
david.pichette@pacelabs.com
(724)850-5617
Project Manager

Enclosures

cc: Lynn Jackson, Phase Separation Science, Inc.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 21020927
Pace Project No.: 30405508

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 21020927
Pace Project No.: 30405508

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30405508001	**21020927-001**	Water	02/09/21 12:10	02/10/21 23:15

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 21020927
Pace Project No.: 30405508

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30405508001	**21020927-001**	EPA 900.0	ERT	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 21020927
Pace Project No.: 30405508

Method: **EPA 900.0**
Description: 900.0 Gross Alpha/Beta
Client: Phase Separation Science, Inc.
Date: February 16, 2021

General Information:
1 sample was analyzed for EPA 900.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 21020927
Pace Project No.: 30405508

Sample: 21020927-001 **Lab ID: 30405508001** Collected: 02/09/21 12:10 Received: 02/10/21 23:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Gross Alpha	EPA 900.0	**8.60 ± 1.78 (0.652) C:NA T:NA**	pCi/L	02/15/21 18:10	12587-46-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 21020927
Pace Project No.: 30405508

QC Batch: 434727
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30405508001

METHOD BLANK: 2099128 Matrix: Water
Associated Lab Samples: 30405508001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.308 ± 0.298 (0.540) C:NA T:NA	pCi/L	02/15/21 18:10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 21020927
Pace Project No.: 30405508

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

WO# : 30405508

30405508

Chain of Custody Form for Subcontracted Analyses

Phase Separation Science, Inc
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

For Questions or issues please contact: Amber Confer

W.O. No. : **21020927**
Project Location : Hanover, MD
Project Number : 31401545.010/04
Report To LOD : No

Report Due On :02/23/21 05:00

Samples Transferred To:
Pace Analytical Svc's., LLC - Pittsburgh PA
1638 Roseytown, Suites 2, 3 & 4
Greensburg, PA 15601

Phone : 724-850-5600

Lab Sample ID	Field Sample ID	Date Sampled	Time Sampled	Matrix	Analyses Required	Method	Type of Container	Preservative
21020927-001	Effluent VSP-4	02/09/21	12:10	Water	Gross Alpha SW-846 9310	SUBCON	1L HDPE	HNO3

001

Data Deliverables Required: COA

Perform Q.C. on Sample : _____

Send Report Attn : reporting@phaseonline.com

Send InvoiceAttn : invoicing@phaseonline.com

Airbill No.: _____ Carrier : Pace Courier

Condition Upon Receipt : _____

Comments : **BOD results are historically <5.0mg/L.**

Samples Relinquished By: _____ Date : 2/10/21 Time: 1300 Samples Received By : Jen/PACE

Samples Relinquished By: Jen/PACE Date : 2/10/20 Time : 1850 Samples Received By: RDS PACE 2-10-21 1900

Samples Relinquished By: RDS PACE Date: 2-10-21 Time: 2315 Samples Received By: Marlow Ulay 2-10-2021 2315

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: Phase Separation Science Project #

#30405508

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other

Label MLL
LIMS Login MLL

Tracking #: N/A

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Thermometer Used 9 Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp °C Correction Factor: 0 °C Final Temp: °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# 10D1101 / Date and Initials of person examining contents: MLL 2/11/2021
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4. no signature on COC
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ / ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	✓			16.
All containers meet method preservation requirements.	✓			Initial when completed MLL / Date/time of preservation / Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:			✓	18.
Trip Blank Custody Seals Present			✓	
Rad Samples Screened < 0.5 mrem/hr	✓			Initial when completed: MLL Date: 2-11-2021 Survey Meter SN: 1563

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

***PM review** is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Kop-Flex

PSS Project No.: 21020927

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

PHASE SEPARATION SCIENCE

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www.phaseonline.com

Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21020927

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21020927-001	W	84852	181746	02/10/2021 10:53	02/10/2021 19:31
	84852-1-BKS	BKS	84852-1-BKS	W	84852	181746	02/10/2021 10:54	02/10/2021 18:03
	84852-1-BLK	BLK	84852-1-BLK	W	84852	181746	02/10/2021 10:54	02/10/2021 17:58
	020301 S	MS	21020501-001 S	W	84852	181746	02/10/2021 10:54	02/10/2021 18:12
	20210209-004 S	MS	21020928-002 S	W	84852	181746	02/10/2021 10:54	02/10/2021 20:00
	020301 SD	MSD	21020501-001 S	W	84852	181746	02/10/2021 10:54	02/10/2021 18:17

PHASE SEPARATION SCIENCE

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Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Kop-Flex
PSS Project No.: 21020927

Analytical Method: EPA 200.8

Prep Method: E200.8_PREP
Seq Number: 181746
Matrix: Water
Date Prep: 02/10/21
MB Sample Id: 84852-1-BLK
LCS Sample Id: 84852-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Manganese	<1.000	40.00	38.04	95	85-115	ug/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE

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800-932-9047
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QC Summary

Project Name Kop-Flex
PSS Project No.: 21020927

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 02/10/21 18:49

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Manganese	40.00	41.46	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/10/21 19:50

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Manganese	40.00	39.86	100	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/10/21 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Manganese	40.00	41.54	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 181746 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/10/21 17:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Manganese	40.00	42.00	105	90-110	ug/L	

X = Recovery outside of QC Criteria

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon VA | PSS Work Order #: 21020927 | PAGE 1 OF 1

BILL TO (If different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kap-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: 3	3	Analysis/Method Required: Total Mn (200.8)	Total alpha gross
1	Effluent VSP-4	2/9/21	1210	WW	3	G	X	X		

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	2/9/21	1305	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 0.8°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 0.8-1.6°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

PHASE SEPARATION SCIENCE

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Baltimore, MD 21228
410-747-8770
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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21020927

Client Name WSP USA - Herndon
Disposal Date 03/16/2021

Received By Thomas Wingate
Date Received 02/09/2021 01:05:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	1.6
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	3

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 02/09/2021

PM Review and Approval: Amber Confer — Date: 02/09/2021

PHASE SEPARATION SCIENCE

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031801

April 1, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21031801**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21031801**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 22, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21031801

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/18/2021 at 10:45 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21031801-001	Effluent VSP-4	WASTE WATER	03/18/21 09:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031801

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/18/2021 09:30** **PSS Sample ID: 21031801-001**
Matrix: WASTE WATER **Date/Time Received: 03/18/2021 10:45**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.5**	ug/L	1.0		1	03/19/21	03/24/21 21:15	1064
Lead	ND	ug/L	1.0		1	03/19/21	03/19/21 16:45	1064
Nickel	**21.0**	ug/L	1.00		1	03/19/21	03/24/21 21:15	1064
Zinc	**26.9**	ug/L	20.0		1	03/19/21	03/19/21 16:45	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.9**	ug/L	1.0		1	03/23/21	03/23/21 19:59	1051
Lead	ND	ug/L	1.0		1	03/23/21	03/23/21 19:59	1051
Nickel	**18.9**	ug/L	1.00		1	03/23/21	03/23/21 19:59	1051
Zinc	**23.1**	ug/L	20.0		1	03/23/21	03/23/21 19:59	1051

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 182912 on Case Narrative.
pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Chloromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Vinyl Chloride	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Bromomethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Chloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Methylene Chloride	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Chloroform	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Benzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Trichloroethene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Bromodichloromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031801

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/18/2021 09:30** **PSS Sample ID: 21031801-001**
Matrix: WASTE WATER **Date/Time Received: 03/18/2021 10:45**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 182912 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Toluene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Tetrachloroethylene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Dibromochloromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Chlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Ethylbenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
Bromoform	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:22	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*102*	*%*	*87-120*		*1*	*03/23/21*	*03/23/21 14:22*	*1011*
4-Bromofluorobenzene	*99*	*%*	*85-147*		*1*	*03/23/21*	*03/23/21 14:22*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*03/23/21*	*03/23/21 14:22*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**23**	mg/L	0.66		1	03/24/21	03/24/21 21:15	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	03/18/21	03/18/21 18:00	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031801

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/18/2021 09:30** **PSS Sample ID: 21031801-001**
Matrix: WASTE WATER **Date/Time Received: 03/18/2021 10:45**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 18-Mar-21 16:50

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		03/23/21	03/23/21 16:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21031801

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21031801: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 182912

Method exceedance: A target analyte was detected in the method blank; Tetrachloroethene was 0.29 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21031801

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21031801-001	W	85403	182923	03/19/2021 14:47	03/19/2021 16:45
	85403-1-BKS	BKS	85403-1-BKS	W	85403	182923	03/19/2021 14:47	03/19/2021 16:41
	85403-1-BLK	BLK	85403-1-BLK	W	85403	182923	03/19/2021 14:47	03/19/2021 16:36
	Effluent VSP-4 S	MS	21031801-001 S	W	85403	182923	03/19/2021 14:47	03/19/2021 16:50
	Effluent VSP-4 SD	MSD	21031801-001 S	W	85403	182923	03/19/2021 14:47	03/19/2021 16:55
	85403-1-BKS	Reanalysis	85403-1-BKS	W	85403	182961	03/19/2021 14:47	03/24/2021 21:10
	85403-1-BLK	Reanalysis	85403-1-BLK	W	85403	182961	03/19/2021 14:47	03/24/2021 21:05
	Effluent VSP-4 S	Reanalysis	21031801-001 S	W	85403	182961	03/19/2021 14:47	03/24/2021 21:19
	Effluent VSP-4 SD	Reanalysis	21031801-001 S	W	85403	182961	03/19/2021 14:47	03/24/2021 21:24
	Effluent VSP-4	Reanalysis	21031801-001	W	85403	182961	03/19/2021 14:47	03/24/2021 21:15
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21031801-001	W	85434	182935	03/23/2021 15:07	03/23/2021 19:59
	85434-1-BKS	BKS	85434-1-BKS	W	85434	182935	03/23/2021 15:07	03/23/2021 19:54
	85434-1-BLK	BLK	85434-1-BLK	W	85434	182935	03/23/2021 15:07	03/23/2021 19:49
	Effluent VSP-4 S	MS	21031801-001 S	W	85434	182935	03/23/2021 15:07	03/23/2021 20:04
	Effluent VSP-4 SD	MSD	21031801-001 S	W	85434	182935	03/23/2021 15:07	03/23/2021 20:09
EPA 624 .1	Effluent VSP-4	Initial	21031801-001	W	85444	182912	03/23/2021 08:06	03/23/2021 14:22
	85444-1-BKS	BKS	85444-1-BKS	W	85444	182912	03/23/2021 08:06	03/23/2021 08:36
	85444-1-BLK	BLK	85444-1-BLK	W	85444	182912	03/23/2021 08:06	03/23/2021 09:52
	Effluent VSP-4 S	MS	21031801-001 S	W	85444	182912	03/23/2021 08:06	03/23/2021 16:15
	Effluent VSP-4 SD	MSD	21031801-001 S	W	85444	182912	03/23/2021 08:06	03/23/2021 16:38
SM 2340B	Effluent VSP-4	Initial	21031801-001	W	85403	182961	03/25/2021 11:37	03/24/2021 21:15
SM 2540D -2011	Effluent VSP-4	Initial	21031801-001	W	182808	182808	03/18/2021 18:00	03/18/2021 18:00
	182808-1-BKS	BKS	182808-1-BKS	W	182808	182808	03/18/2021 18:00	03/18/2021 18:00
	182808-1-BLK	BLK	182808-1-BLK	W	182808	182808	03/18/2021 18:00	03/18/2021 18:00
	Outfall - 1 D	MD	21031804-001 D	W	182808	182808	03/18/2021 18:00	03/18/2021 18:00
	Outfall - 006 D	MD	21031818-001 D	W	182808	182808	03/18/2021 18:00	03/18/2021 18:00
SM 5210B -2011	Effluent VSP-4	Initial	21031801-001	W	183123	183123	03/23/2021 16:00	03/23/2021 16:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031801

Analytical Method: SM 2540D -2011
Seq Number: 182808 Matrix: Water
MB Sample Id: 182808-1-BLK LCS Sample Id: 182808-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	100.1	100	100	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 182923 Matrix: Water Date Prep: 03/19/21
MB Sample Id: 85403-1-BLK LCS Sample Id: 85403-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.32	101	85-115	ug/L	
Lead	<1.000	40.00	36.66	92	85-115	ug/L	
Zinc	<20.00	200	191.2	96	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 182961 Matrix: Water Date Prep: 03/19/21
MB Sample Id: 85403-1-BLK LCS Sample Id: 85403-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	40.00	41.36	103	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 182923 Matrix: Waste Water Date Prep: 03/19/21
Parent Sample Id: 21031801-001 MS Sample Id: 21031801-001 S MSD Sample Id: 21031801-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.651	40.00	42.32	99	42.06	99	70-130	0	25	ug/L	
Lead	<1.000	40.00	36.01	90	36.59	91	70-130	1	25	ug/L	
Zinc	26.92	200	229.4	101	219	96	70-130	5	25	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 182961 Matrix: Waste Water Date Prep: 03/19/21
Parent Sample Id: 21031801-001 MS Sample Id: 21031801-001 S MSD Sample Id: 21031801-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Nickel	20.95	40.00	62.26	103	62.40	104	70-130	0	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031801

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 182935 Matrix: Water Date Prep: 03/23/21
MB Sample Id: 85434-1-BLK LCS Sample Id: 85434-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	43.28	108	85-115	ug/L	
Lead	<1.000	40.00	41.93	105	85-115	ug/L	
Nickel	<1.000	40.00	42.26	106	85-115	ug/L	
Zinc	<20.00	200	221.3	111	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 182935 Matrix: Waste Water Date Prep: 03/23/21
Parent Sample Id: 21031801-001 MS Sample Id: 21031801-001 S MSD Sample Id: 21031801-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.903	40.00	44.46	106	44.50	106	70-130	0	25	ug/L	
Lead	<1.000	40.00	45.75	114	45.87	115	70-130	1	25	ug/L	
Nickel	18.93	40.00	60.45	104	60.45	104	70-130	0	25	ug/L	
Zinc	23.12	200	233.5	105	232.1	104	70-130	1	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031801

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 182912
Matrix: Water
Date Prep: 03/23/21
MB Sample Id: 85444-1-BLK
LCS Sample Id: 85444-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.78	92	54-148	ug/L	
Chloromethane	<1.000	50.00	45.13	90	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	47.86	96	5-195	ug/L	
Bromomethane	<1.000	50.00	39.26	79	15-185	ug/L	
Chloroethane	<1.000	50.00	45.85	92	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.62	97	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.25	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.86	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.58	101	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.44	99	70-130	ug/L	
Chloroform	<1.000	50.00	48.20	96	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.07	102	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	51.42	103	70-130	ug/L	
Benzene	<1.000	50.00	50.40	101	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.40	99	70-130	ug/L	
Trichloroethene	<1.000	50.00	51.64	103	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.42	101	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.24	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.98	100	25-175	ug/L	
Toluene	<1.000	50.00	48.81	98	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.22	100	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.43	105	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.60	101	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	55.85	112	70-135	ug/L	
Chlorobenzene	<1.000	50.00	50.23	100	65-135	ug/L	
Ethylbenzene	<1.000	50.00	51.91	104	60-140	ug/L	
Bromoform	<1.000	50.00	52.63	105	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.38	105	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.67	103	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.13	102	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.06	104	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	103		101		87-120	%
4-Bromofluorobenzene	99		98		85-147	%
Toluene-D8	100		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031801

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 182912 Matrix: Waste Water Date Prep: 03/23/21
Parent Sample Id: 21031801-001 MS Sample Id: 21031801-001 S MSD Sample Id: 21031801-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.72	91	44.07	88	43-150	3	27	ug/L	
Chloromethane	<1.000	50.00	50.13	100	48.28	97	1-273	3	60	ug/L	
Vinyl Chloride	<1.000	50.00	49.03	98	46.72	93	1-251	5	66	ug/L	
Bromomethane	<1.000	50.00	43.32	87	41.31	83	1-242	5	61	ug/L	
Chloroethane	<1.000	50.00	48.87	98	46.38	93	14-230	5	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	50.29	101	47.63	95	17-181	6	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.31	101	47.97	96	1-234	5	32	ug/L	
Methylene Chloride	<1.000	50.00	50.19	100	48.59	97	1-221	3	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.86	100	50.35	101	54-156	1	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.07	102	49.17	98	59-155	4	40	ug/L	
Chloroform	<1.000	50.00	49.31	99	47.66	95	51-138	4	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.73	107	51.87	104	52-162	3	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.84	108	51.69	103	70-140	5	41	ug/L	
Benzene	<1.000	50.00	51.21	102	49.66	99	37-151	3	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.17	98	48.10	96	49-155	2	49	ug/L	
Trichloroethene	<1.000	50.00	51.94	104	50.20	100	70-157	4	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.25	103	50.05	100	1-210	3	55	ug/L	
Bromodichloromethane	<1.000	50.00	53.15	106	52.03	104	35-155	2	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	50.29	101	48.97	98	1-227	3	58	ug/L	
Toluene	<1.000	50.00	49.58	99	48.23	96	47-150	3	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	49.77	100	49.10	98	17-183	2	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	51.35	103	50.25	101	52-150	2	45	ug/L	
Tetrachloroethylene	<1.000	50.00	50.53	101	49.26	99	64-148	2	39	ug/L	
Dibromochloromethane	<1.000	50.00	55.31	111	54.13	108	53-149	3	50	ug/L	
Chlorobenzene	<1.000	50.00	51.04	102	49.36	99	37-160	3	53	ug/L	
Ethylbenzene	<1.000	50.00	52.71	105	50.86	102	37-162	3	63	ug/L	
Bromoform	<1.000	50.00	50.79	102	49.99	100	45-169	2	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.39	105	50.50	101	46-157	4	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.19	106	50.36	101	59-156	5	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	52.60	105	50.01	100	18-190	5	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.91	108	51.27	103	18-190	5	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	102		102		87-120	%
4-Bromofluorobenzene	99		98		85-147	%
Toluene-D8	101		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 182923 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 03/19/21 15:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	39.72	99	85-115	ug/L	
Zinc	200	207.3	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182923 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 03/19/21 17:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	39.30	98	85-115	ug/L	
Zinc	200	211.5	106	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182923 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 03/19/21 18:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40.00	38.88	97	85-115	ug/L	
Zinc	200	208.8	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182961 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 03/24/21 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	46.00	115	85-115	ug/L	
Nickel	40.00	43.84	110	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182961 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 03/24/21 21:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	46.05	115	85-115	ug/L	
Nickel	40.00	43.67	109	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182961 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 03/24/21 22:29

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	45.40	114	85-115	ug/L	
Nickel	40.00	43.27	108	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182923 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/19/21 13:37

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	40.00	39.34	98	90-110	ug/L	
Zinc	200	206.3	103	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 182961 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/24/21 18:38

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	43.76	109	90-110	ug/L	
Nickel	40.00	42.25	106	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 182935 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 03/23/21 19:17

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	42.49	106	85-115	ug/L	
Lead	40.00	41.80	105	85-115	ug/L	
Nickel	40.00	41.56	104	85-115	ug/L	
Zinc	200	218.1	109	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 182935 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 03/23/21 20:25

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	43.02	108	85-115	ug/L	
Lead	40.00	41.79	104	85-115	ug/L	
Nickel	40.00	42.17	105	85-115	ug/L	
Zinc	200	214	107	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031801

Analytical Method: EPA 200.8 Dissolved
Seq Number: 182935 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 03/23/21 21:31

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	43.41	109	85-115	ug/L	
Lead	40.00	41.80	105	85-115	ug/L	
Nickel	40.00	42.52	106	85-115	ug/L	
Zinc	200	207.9	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 182935 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/23/21 17:45

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	42.91	107	90-110	ug/L	
Lead	40.00	41.53	104	90-110	ug/L	
Nickel	40.00	41.85	105	90-110	ug/L	
Zinc	200	200.9	100	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031801

Analytical Method: EPA 624 .1

Seq Number: 182706 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 03/16/21 14:53

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05165	103	54-148	mg/L	
Chloromethane	0.05000	0.05053	101	57-135	mg/L	
Vinyl Chloride	0.05000	0.05070	101	64-129	mg/L	
Bromomethane	0.05000	0.05116	102	67-132	mg/L	
Chloroethane	0.05000	0.04683	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05069	101	67-126	mg/L	
Methylene Chloride	0.05000	0.05123	102	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05308	106	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05294	106	76-127	mg/L	
Chloroform	0.05000	0.05114	102	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05447	109	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05372	107	73-130	mg/L	
Benzene	0.05000	0.05279	106	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05275	106	77-129	mg/L	
Trichloroethene	0.05000	0.05315	106	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05389	108	74-129	mg/L	
Bromodichloromethane	0.05000	0.05559	111	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05351	107	76-116	mg/L	
Toluene	0.05000	0.05120	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05338	107	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05336	107	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05122	102	78-128	mg/L	
Dibromochloromethane	0.05000	0.05688	114	70-132	mg/L	
Chlorobenzene	0.05000	0.05291	106	72-128	mg/L	
Ethylbenzene	0.05000	0.05498	110	69-131	mg/L	
Bromoform	0.05000	0.05191	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05297	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05373	107	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05342	107	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05398	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.0184

SITE LOCATION: Hanover, Md | P.O. #:

SAMPLER(S): Lauren Johnson | DW CERT #:

PSS Work Order #: 2103180 1 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	3	3									
							Analysis/ Method Required	VOCs (624)	Dissolved metals (200.8)	Total metals + Hardness (200.8)	TSS	BOD							
1	Effluent VSP-4	3/18/21	09:30	WW	7	G		X	X	X	X	X							dissolved metals field filtered

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1) Lauren Johnson	3/18/21	10:45	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TO: 1.5°C

Custody Seal: Cool-Intact

Coolers: PRES Temp: 1.9°-3.3°C

Shipping Carrier: Client

Special Instructions:
standard 10-day TAT
metals = Pb, Cu, Ni, Zn

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21031801

Client Name WSP USA - Herndon
Disposal Date 04/22/2021

Received By Thomas Wingate
Date Received 03/18/2021 10:45:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	3.3
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Lauren Johnson
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 03/18/2021

PM Review and Approval: Amber Confer — Date: 03/18/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031802

April 1, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21031802**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21031802**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 22, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21031802

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/18/2021 at 10:45 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21031802-001	Effluent VSP-4	WASTE WATER	03/18/21 09:30
21031802-002	TB-031821	WATER	03/18/21 10:45

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031802

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/18/2021 09:30** **PSS Sample ID: 21031802-001**
Matrix: WASTE WATER **Date/Time Received: 03/18/2021 10:45**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

Qualifier(s): See Batch 183145 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**1.5**	ug/L	1.0		1	04/01/21	04/01/21 11:20	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*102*	*%*	*80-120*		*1*	*04/01/21*	*04/01/21 11:20*	*1045*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031802

Sample ID: TB-031821 **Date/Time Sampled: 03/18/2021 10:45** **PSS Sample ID: 21031802-002**
Matrix: WATER **Date/Time Received: 03/18/2021 10:45**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 182912 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Chloromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Vinyl Chloride	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Bromomethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Chloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Methylene Chloride	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Chloroform	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Benzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Trichloroethene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Bromodichloromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Toluene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Tetrachloroethylene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Dibromochloromethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Chlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Ethylbenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
Bromoform	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	03/23/21	03/23/21 14:00	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*102*	*%*	*87-120*	*1*	*03/23/21*	*03/23/21 14:00*	*1011*
4-Bromofluorobenzene	*99*	*%*	*85-147*	*1*	*03/23/21*	*03/23/21 14:00*	*1011*
Toluene-D8	*100*	*%*	*88-110*	*1*	*03/23/21*	*03/23/21 14:00*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21031802

Sample ID: TB-031821 **Date/Time Sampled: 03/18/2021 10:45** **PSS Sample ID: 21031802-002**
Matrix: WATER **Date/Time Received: 03/18/2021 10:45**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

Qualifier(s): See Batch 183145 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/01/21	04/01/21 11:42	1045
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*103*	*%*	*80-120*		*1*	*04/01/21*	*04/01/21 11:42*	*1045*

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Project Name: Kop-Flex

PSS Project No.: 21031802

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 182912

Method exceedance: A target analyte was detected in the method blank; Tetrachloroethene was 0.29 ppb in method blank.

Analytical:

1,4-Dioxane by GC/MS - SIM

Batch: 183145

Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) - Relative Percent Difference (RPD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21031802

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-031821	Initial	21031802-002	W	85444	182912	03/23/2021 08:06	03/23/2021 14:00
	85444-1-BKS	BKS	85444-1-BKS	W	85444	182912	03/23/2021 08:06	03/23/2021 08:36
	85444-1-BLK	BLK	85444-1-BLK	W	85444	182912	03/23/2021 08:06	03/23/2021 09:52
	Effluent VSP-4 S	MS	21031801-001 S	W	85444	182912	03/23/2021 08:06	03/23/2021 16:15
	Effluent VSP-4 SD	MSD	21031801-001 S	W	85444	182912	03/23/2021 08:06	03/23/2021 16:38
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21031802-001	W	85548	183145	04/01/2021 08:40	04/01/2021 11:20
	TB-031821	Initial	21031802-002	W	85548	183145	04/01/2021 08:40	04/01/2021 11:42
	85548-1-BKS	BKS	85548-1-BKS	W	85548	183145	04/01/2021 08:40	04/01/2021 09:27
	85548-1-BLK	BLK	85548-1-BLK	W	85548	183145	04/01/2021 08:40	04/01/2021 10:57
	85548-1-BSD	BSD	85548-1-BSD	W	85548	183145	04/01/2021 08:40	04/01/2021 09:49

Analytical Method: EPA 624 .1 Prep Method: E624PREP

Seq Number: 182912 Matrix: Water Date Prep: 03/23/21

MB Sample Id: 85444-1-BLK LCS Sample Id: 85444-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.78	92	54-148	ug/L	
Chloromethane	<1.000	50.00	45.13	90	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	47.86	96	5-195	ug/L	
Bromomethane	<1.000	50.00	39.26	79	15-185	ug/L	
Chloroethane	<1.000	50.00	45.85	92	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.62	97	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.25	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.86	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.58	101	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.44	99	70-130	ug/L	
Chloroform	<1.000	50.00	48.20	96	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.07	102	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	51.42	103	70-130	ug/L	
Benzene	<1.000	50.00	50.40	101	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.40	99	70-130	ug/L	
Trichloroethene	<1.000	50.00	51.64	103	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.42	101	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.24	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.98	100	25-175	ug/L	
Toluene	<1.000	50.00	48.81	98	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.22	100	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.43	105	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.60	101	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	55.85	112	70-135	ug/L	
Chlorobenzene	<1.000	50.00	50.23	100	65-135	ug/L	
Ethylbenzene	<1.000	50.00	51.91	104	60-140	ug/L	
Bromoform	<1.000	50.00	52.63	105	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.38	105	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.67	103	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.13	102	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.06	104	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	103		101		87-120	%
4-Bromofluorobenzene	99		98		85-147	%
Toluene-D8	100		100		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B

Seq Number: 183145 Matrix: Water Date Prep: 04/01/21

MB Sample Id: 85548-1-BLK LCS Sample Id: 85548-1-BKS LCSD Sample Id: 85548-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	32.68	109	40.26	134	50-150	21	20	ug/L	F

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	102		104		105		80-120	%

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Project Name Kop-Flex
PSS Project No.: 21031802

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 182706 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 03/16/21 14:53

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05165	103	54-148	mg/L	
Chloromethane	0.05000	0.05053	101	57-135	mg/L	
Vinyl Chloride	0.05000	0.05070	101	64-129	mg/L	
Bromomethane	0.05000	0.05116	102	67-132	mg/L	
Chloroethane	0.05000	0.04683	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05069	101	67-126	mg/L	
Methylene Chloride	0.05000	0.05123	102	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05308	106	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05294	106	76-127	mg/L	
Chloroform	0.05000	0.05114	102	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05447	109	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05372	107	73-130	mg/L	
Benzene	0.05000	0.05279	106	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05275	106	77-129	mg/L	
Trichloroethene	0.05000	0.05315	106	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05389	108	74-129	mg/L	
Bromodichloromethane	0.05000	0.05559	111	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05351	107	76-116	mg/L	
Toluene	0.05000	0.05120	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05338	107	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05336	107	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05122	102	78-128	mg/L	
Dibromochloromethane	0.05000	0.05688	114	70-132	mg/L	
Chlorobenzene	0.05000	0.05291	106	72-128	mg/L	
Ethylbenzene	0.05000	0.05498	110	69-131	mg/L	
Bromoform	0.05000	0.05191	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05297	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05373	107	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05342	107	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05398	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 183145 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 04/01/21 09:04

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.16	104	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	106	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21031802

Analytical Method: SW-846 8260 B-Modified

Seq Number: 181377 Matrix: Water

Parent Sample Id: ICV, 1,4-DIOXANE-1 ICV Sample Id: ICV, 1,4-DIOXANE-1 Analyzed Date: 01/26/21 14:48

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	33.04	110	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21031802 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, Md | P.O. #:

SAMPLER(S): Lauren Johnson | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1	Analysis/ Method Required: 1,4-dioxane (8260B)	VOCs (8260B)	
1	Effluent VSP-4	3/18/21	0930	WW	3	G		X				
2	TB-031821	–	–	W	4	–		X	X			trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
Lauren Johnson	3/18/21	10:45	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 1.5°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 4.8-4.9°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21031802

Client Name WSP USA - Herndon
Disposal Date 04/22/2021

Received By Thomas Wingate
Date Received 03/18/2021 10:45:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.9
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Lauren Johnson
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 03/18/2021

PM Review and Approval: Amber Confer — Date: 03/18/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042704

May 11, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21042704**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21042704**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on June 1, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21042704

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/27/2021 at 01:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21042704-001	Effluent VSP-4	WASTE WATER	04/27/21 12:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042704

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/27/2021 12:20** **PSS Sample ID: 21042704-001**
Matrix: WASTE WATER **Date/Time Received: 04/27/2021 13:15**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.0**	ug/L	1.0		1	04/29/21	04/29/21 17:32	1064
Lead	ND	ug/L	1.0		1	04/29/21	04/29/21 17:32	1064
Nickel	**19.7**	ug/L	1.00		1	04/29/21	04/29/21 17:32	1064
Zinc	**30.1**	ug/L	20.0		1	04/29/21	04/29/21 17:32	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.8**	ug/L	1.0		1	04/29/21	04/29/21 18:33	1064
Lead	ND	ug/L	1.0		1	04/29/21	04/29/21 18:33	1064
Nickel	**18.4**	ug/L	1.00		1	04/29/21	04/29/21 18:33	1064
Zinc	**30.9**	ug/L	20.0		1	04/29/21	04/29/21 18:33	1064

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Chloromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Vinyl Chloride	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Bromomethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Chloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Methylene Chloride	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Chloroform	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Benzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Trichloroethene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Bromodichloromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042704

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/27/2021 12:20** **PSS Sample ID: 21042704-001**
Matrix: WASTE WATER **Date/Time Received: 04/27/2021 13:15**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Toluene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Tetrachloroethylene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Chlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Ethylbenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
Bromoform	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:35	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*102*	*%*	*87-120*		*1*	*04/30/21*	*04/30/21 10:35*	*1011*
4-Bromofluorobenzene	*100*	*%*	*85-147*		*1*	*04/30/21*	*04/30/21 10:35*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*04/30/21*	*04/30/21 10:35*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**21**	mg/L	0.66		1	04/29/21	04/29/21 17:32	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	**1.7**	mg/L	1.0		1	04/28/21	04/28/21 16:30	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042704

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/27/2021 12:20** **PSS Sample ID: 21042704-001**
Matrix: WASTE WATER **Date/Time Received: 04/27/2021 13:15**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 24-Apr-21 17:10

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		04/27/21	05/02/21 16:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21042704

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21042704: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21042704

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21042704-001	W	85904	183910	04/29/2021 15:49	04/29/2021 17:32
	85904-1-BKS	BKS	85904-1-BKS	W	85904	183910	04/29/2021 15:49	04/29/2021 17:14
	85904-1-BLK	BLK	85904-1-BLK	W	85904	183910	04/29/2021 15:49	04/29/2021 17:10
	4-26-2021-1 S	MS	21042702-001 S	W	85904	183910	04/29/2021 15:49	04/29/2021 17:23
	4-26-2021-1 SD	MSD	21042702-001 S	W	85904	183910	04/29/2021 15:49	04/29/2021 17:28
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21042704-001	W	85905	183911	04/29/2021 15:50	04/29/2021 18:33
	85905-1-BKS	BKS	85905-1-BKS	W	85905	183911	04/29/2021 15:50	04/29/2021 18:28
	85905-1-BLK	BLK	85905-1-BLK	W	85905	183911	04/29/2021 15:50	04/29/2021 18:23
	Effluent VSP-4 S	MS	21042704-001 S	W	85905	183911	04/29/2021 15:50	04/29/2021 18:37
	Effluent VSP-4 SD	MSD	21042704-001 S	W	85905	183911	04/29/2021 15:50	04/29/2021 18:56
EPA 624 .1	Effluent VSP-4	Initial	21042704-001	W	85926	183939	04/30/2021 08:00	04/30/2021 10:35
	85926-1-BKS	BKS	85926-1-BKS	W	85926	183939	04/30/2021 08:00	04/30/2021 08:30
	85926-1-BLK	BLK	85926-1-BLK	W	85926	183939	04/30/2021 08:00	04/30/2021 09:46
	FLA Breakthrough APR 2021 S	MS	21042804-001 S	W	85926	183939	04/30/2021 08:00	04/30/2021 14:02
	FLA Breakthrough APR 2021 SD	MSD	21042804-001 S	W	85926	183939	04/30/2021 08:00	04/30/2021 14:25
SM 2340B	Effluent VSP-4	Initial	21042704-001	W	85904	183910	04/30/2021 12:18	04/29/2021 17:32
SM 2540D -2011	Effluent VSP-4	Initial	21042704-001	W	183868	183868	04/28/2021 16:30	04/28/2021 16:30
	183868-1-BKS	BKS	183868-1-BKS	W	183868	183868	04/28/2021 16:30	04/28/2021 16:30
	183868-1-BLK	BLK	183868-1-BLK	W	183868	183868	04/28/2021 16:30	04/28/2021 16:30
	601 D	MD	21042619-002 D	W	183868	183868	04/28/2021 16:30	04/28/2021 16:30
SM 5210B -2011	Effluent VSP-4	Initial	21042704-001	W	184013	184013	04/27/2021 17:10	05/02/2021 16:00

Analytical Method: SM 2540D -2011
Seq Number: 183868 Matrix: Water
MB Sample Id: 183868-1-BLK LCS Sample Id: 183868-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	99.50	99.00	99	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 183910 Matrix: Water Date Prep: 04/29/21
MB Sample Id: 85904-1-BLK LCS Sample Id: 85904-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	36.42	91	85-115	ug/L	
Lead	<1.000	40.00	35.64	89	85-115	ug/L	
Nickel	<1.000	40.00	35.98	90	85-115	ug/L	
Zinc	<20.00	200	185.3	93	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 183911 Matrix: Water Date Prep: 04/29/21
MB Sample Id: 85905-1-BLK LCS Sample Id: 85905-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	36.45	91	85-115	ug/L	
Lead	<1.000	40.00	36.02	90	85-115	ug/L	
Nickel	<1.000	40.00	35.86	90	85-115	ug/L	
Zinc	<20.00	200	184.4	92	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 183911 Matrix: Waste Water Date Prep: 04/29/21
Parent Sample Id: 21042704-001 MS Sample Id: 21042704-001 S MSD Sample Id: 21042704-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.793	40.00	38.24	91	38.26	91	70-130	0	25	ug/L	
Lead	<1.000	40.00	46.20	116	46.80	117	70-130	1	25	ug/L	
Nickel	18.44	40.00	54.37	90	54.36	90	70-130	0	25	ug/L	
Zinc	30.90	200	219.4	94	219.2	94	70-130	0	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042704

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 183939
Matrix: Water
Date Prep: 04/30/21
MB Sample Id: 85926-1-BLK
LCS Sample Id: 85926-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	35.04	70	54-148	ug/L	
Chloromethane	<1.000	50.00	41.15	82	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	45.23	90	5-195	ug/L	
Bromomethane	<1.000	50.00	43.85	88	15-185	ug/L	
Chloroethane	<1.000	50.00	44.12	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.55	93	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.99	94	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.10	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.07	96	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.55	97	70-130	ug/L	
Chloroform	<1.000	50.00	49.18	98	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.46	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.38	99	70-130	ug/L	
Benzene	<1.000	50.00	48.64	97	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.95	98	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.41	97	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.31	99	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	52.21	104	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.29	97	25-175	ug/L	
Toluene	<1.000	50.00	48.46	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.49	97	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.28	101	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.27	97	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	52.92	106	70-135	ug/L	
Chlorobenzene	<1.000	50.00	49.67	99	65-135	ug/L	
Ethylbenzene	<1.000	50.00	51.11	102	60-140	ug/L	
Bromoform	<1.000	50.00	50.32	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.05	100	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.61	101	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.34	101	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.05	102	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		100		87-120	%
4-Bromofluorobenzene	101		97		85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 183910 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 04/29/21 16:47

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.41	96	85-115	ug/L	
Lead	40.00	38.33	96	85-115	ug/L	
Nickel	40.00	38.06	95	85-115	ug/L	
Zinc	200	198.7	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 183910 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 04/29/21 17:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.45	96	85-115	ug/L	
Lead	40.00	38.10	95	85-115	ug/L	
Nickel	40.00	38.60	97	85-115	ug/L	
Zinc	200	198.7	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 183910 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 04/29/21 18:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.77	97	85-115	ug/L	
Lead	40.00	38.27	96	85-115	ug/L	
Nickel	40.00	38.54	96	85-115	ug/L	
Zinc	200	201.2	101	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 183910 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 04/29/21 12:26

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.49	96	90-110	ug/L	
Lead	40.00	38.67	97	90-110	ug/L	
Nickel	40.00	37.76	94	90-110	ug/L	
Zinc	200	194.1	97	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 183911 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 04/29/21 17:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.45	96	85-115	ug/L	
Lead	40.00	38.10	95	85-115	ug/L	
Nickel	40.00	38.60	97	85-115	ug/L	
Zinc	200	198.7	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 183911 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 04/29/21 18:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.77	97	85-115	ug/L	
Lead	40.00	38.27	96	85-115	ug/L	
Nickel	40.00	38.54	96	85-115	ug/L	
Zinc	200	201.2	101	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 183911 Matrix: Water
CCV Sample Id: CCV 7 Analyzed Date: 04/29/21 19:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.60	97	85-115	ug/L	
Lead	40.00	38.76	97	85-115	ug/L	
Nickel	40.00	38.35	96	85-115	ug/L	
Zinc	200	199.6	100	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 183911 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 04/29/21 12:26

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.49	96	90-110	ug/L	
Lead	40.00	38.67	97	90-110	ug/L	
Nickel	40.00	37.76	94	90-110	ug/L	
Zinc	200	194.1	97	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042704

Analytical Method: EPA 624 .1

Seq Number: 183813 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/27/21 13:34

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05116	102	54-148	mg/L	
Chloromethane	0.05000	0.05149	103	57-135	mg/L	
Vinyl Chloride	0.05000	0.05159	103	64-129	mg/L	
Bromomethane	0.05000	0.05014	100	67-132	mg/L	
Chloroethane	0.05000	0.04918	98	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05206	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05245	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05148	103	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05248	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05193	104	76-127	mg/L	
Chloroform	0.05000	0.05214	104	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05401	108	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05383	108	73-130	mg/L	
Benzene	0.05000	0.05208	104	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05172	103	77-129	mg/L	
Trichloroethene	0.05000	0.05311	106	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05311	106	74-129	mg/L	
Bromodichloromethane	0.05000	0.05446	109	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05243	105	76-116	mg/L	
Toluene	0.05000	0.05177	104	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05259	105	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05262	105	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05305	106	78-128	mg/L	
Dibromochloromethane	0.05000	0.05603	112	70-132	mg/L	
Chlorobenzene	0.05000	0.05311	106	72-128	mg/L	
Ethylbenzene	0.05000	0.05519	110	69-131	mg/L	
Bromoform	0.05000	0.05136	103	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05290	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05459	109	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05427	109	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05487	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	100	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 21042704 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: 1	3	3	Analysis/Method Required: VOCs (624)	Dissolved metals (200.8)	Total metals + hardness (200.8)	BOD	TSS
1	Effluent VSP-4	4/27/21	1220	WW	7	G	X	X	X	X	X			

Preservative Codes: 1 - HCl; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	4/27/21	1315	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 3.9°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 3.6-4.1°C

Shipping Carrier: TFE

Special Instructions: Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21042704

Client Name WSP USA - Herndon
Disposal Date 06/01/2021

Received By Thomas Wingate
Date Received 04/27/2021 01:15:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.1
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 04/27/2021

PM Review and Approval: Amber J Confer Date: 04/28/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042705

May 11, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21042705**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21042705**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on June 1, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21042705

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/27/2021 at 01:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21042705-001	Effluent VSP-4	WASTE WATER	04/27/21 12:20
21042705-002	Influent VSP-1	GROUND WATER	04/27/21 12:35
21042705-003	TB-042721	WATER	04/27/21 13:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042705

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/27/2021 12:20** **PSS Sample ID: 21042705-001**
Matrix: WASTE WATER **Date/Time Received: 04/27/2021 13:15**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**1.2**	ug/L	1.0		1	05/10/21	05/10/21 17:20	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*99*	*%*	*80-120*		*1*	*05/10/21*	*05/10/21 17:20*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042705

Sample ID: Influent VSP-1 **Date/Time Sampled: 04/27/2021 12:35** **PSS Sample ID: 21042705-002**
Matrix: GROUND WATER **Date/Time Received: 04/27/2021 13:15**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**91**	ug/L	10		10	05/10/21	05/10/21 17:42	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*10*	*05/10/21*	*05/10/21 17:42*	*1011*

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 184021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	05/05/21	05/05/21 20:17	1011
Benzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Bromochloromethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Bromodichloromethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Bromoform	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Bromomethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	05/05/21	05/05/21 20:17	1011
Carbon Disulfide	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Carbon tetrachloride	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Chlorobenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Chloroethane	**3.9**	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Chloroform	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Chloromethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Cyclohexane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Dibromochloromethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,1-Dichloroethane	**40**	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2-Dichloroethane	**1.2**	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,1-Dichloroethene	**190**	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042705

Sample ID: Influent VSP-1 **Date/Time Sampled: 04/27/2021 12:35** **PSS Sample ID: 21042705-002**
Matrix: GROUND WATER **Date/Time Received: 04/27/2021 13:15**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 184021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Ethylbenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	05/05/21	05/05/21 20:17	1011
Isopropylbenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Methyl Acetate	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Methylcyclohexane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Methylene chloride	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	05/05/21	05/05/21 20:17	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Naphthalene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Styrene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Tetrachloroethene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Toluene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,1,1-Trichloroethane	**16**	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Trichloroethene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
Vinyl chloride	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011
m&p-Xylene	ND	ug/L	2.0		1	05/05/21	05/05/21 20:17	1011
o-Xylene	ND	ug/L	1.0		1	05/05/21	05/05/21 20:17	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*97*	*%*	*88-112*		*1*	*05/05/21*	*05/05/21 20:17*	*1011*
Dibromofluoromethane	*102*	*%*	*93-111*		*1*	*05/05/21*	*05/05/21 20:17*	*1011*
Toluene-D8	*100*	*%*	*94-107*		*1*	*05/05/21*	*05/05/21 20:17*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042705

Sample ID: TB-042721 **Date/Time Sampled: 04/27/2021 13:15** **PSS Sample ID: 21042705-003**
Matrix: WATER **Date/Time Received: 04/27/2021 13:15**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Chloromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Vinyl Chloride	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Bromomethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Chloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Methylene Chloride	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Chloroform	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Benzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Trichloroethene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Bromodichloromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Toluene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Tetrachloroethylene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Chlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Ethylbenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
Bromoform	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/30/21	04/30/21 10:57	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*103*	*%*	*87-120*		*1*	*04/30/21*	*04/30/21 10:57*	*1011*
4-Bromofluorobenzene	*98*	*%*	*85-147*		*1*	*04/30/21*	*04/30/21 10:57*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*04/30/21*	*04/30/21 10:57*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21042705

Sample ID: TB-042721 **Date/Time Sampled: 04/27/2021 13:15** **PSS Sample ID: 21042705-003**
Matrix: WATER **Date/Time Received: 04/27/2021 13:15**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	05/10/21	05/10/21 16:58	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*98*	*%*	*80-120*		*1*	*05/10/21*	*05/10/21 16:58*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21042705

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

TCL Volatiles plus Oxygenates

Batch: 184021

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits. Exceedances are identified in QC summary.

Method exceedance: Laboratory control sample exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21042705

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-042721	Initial	21042705-003	W	85926	183939	04/30/2021 08:00	04/30/2021 10:57
	85926-1-BKS	BKS	85926-1-BKS	W	85926	183939	04/30/2021 08:00	04/30/2021 08:30
	85926-1-BLK	BLK	85926-1-BLK	W	85926	183939	04/30/2021 08:00	04/30/2021 09:46
	FLA Breakthrough APR 2021 S	MS	21042804-001 S	W	85926	183939	04/30/2021 08:00	04/30/2021 14:02
	FLA Breakthrough APR 2021 SD	MSD	21042804-001 S	W	85926	183939	04/30/2021 08:00	04/30/2021 14:25
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21042705-001	W	86025	184130	05/10/2021 10:21	05/10/2021 17:20
	Influent VSP-1	Initial	21042705-002	W	86025	184130	05/10/2021 10:21	05/10/2021 17:42
	TB-042721	Initial	21042705-003	W	86025	184130	05/10/2021 10:21	05/10/2021 16:58
	86025-1-BKS	BKS	86025-1-BKS	W	86025	184130	05/10/2021 10:21	05/10/2021 15:29
	86025-1-BLK	BLK	86025-1-BLK	W	86025	184130	05/10/2021 10:21	05/10/2021 16:35
	86025-1-BSD	BSD	86025-1-BSD	W	86025	184130	05/10/2021 10:21	05/10/2021 15:51
SW-846 8260 D	Influent VSP-1	Initial	21042705-002	W	85966	184021	05/05/2021 09:00	05/05/2021 20:17
	85966-1-BKS	BKS	85966-1-BKS	W	85966	184021	05/05/2021 09:00	05/05/2021 09:22
	85966-1-BLK	BLK	85966-1-BLK	W	85966	184021	05/05/2021 09:00	05/05/2021 10:39
	MW-55 S	MS	21043021-004 S	W	85966	184021	05/05/2021 09:00	05/05/2021 14:39
	MW-55 SD	MSD	21043021-004 S	W	85966	184021	05/05/2021 09:00	05/05/2021 15:01

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042705

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 183939 Matrix: Water Date Prep: 04/30/21
MB Sample Id: 85926-1-BLK LCS Sample Id: 85926-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	35.04	70	54-148	ug/L	
Chloromethane	<1.000	50.00	41.15	82	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	45.23	90	5-195	ug/L	
Bromomethane	<1.000	50.00	43.85	88	15-185	ug/L	
Chloroethane	<1.000	50.00	44.12	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.55	93	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.99	94	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.10	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.07	96	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.55	97	70-130	ug/L	
Chloroform	<1.000	50.00	49.18	98	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.46	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.38	99	70-130	ug/L	
Benzene	<1.000	50.00	48.64	97	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.95	98	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.41	97	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.31	99	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	52.21	104	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.29	97	25-175	ug/L	
Toluene	<1.000	50.00	48.46	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.49	97	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.28	101	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.27	97	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	52.92	106	70-135	ug/L	
Chlorobenzene	<1.000	50.00	49.67	99	65-135	ug/L	
Ethylbenzene	<1.000	50.00	51.11	102	60-140	ug/L	
Bromoform	<1.000	50.00	50.32	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.05	100	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.61	101	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.34	101	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.05	102	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		100		87-120	%
4-Bromofluorobenzene	101		97		85-147	%
Toluene-D8	100		100		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 184130 Matrix: Water Date Prep: 05/10/21
MB Sample Id: 86025-1-BLK LCS Sample Id: 86025-1-BKS LCSD Sample Id: 86025-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	30.57	102	31.60	105	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		100		100		80-120	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042705

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 184021
Matrix: Water
Date Prep: 05/05/21
MB Sample Id: 85966-1-BLK
LCS Sample Id: 85966-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	43.34	87	26-128	ug/L	
Benzene	<1.000	50.00	46.17	92	82-115	ug/L	
Bromochloromethane	<1.000	50.00	48.29	97	91-115	ug/L	
Bromodichloromethane	<1.000	50.00	47.16	94	88-122	ug/L	
Bromoform	<1.000	50.00	44.04	88	79-122	ug/L	
Bromomethane	<1.000	50.00	40.32	81	50-143	ug/L	
2-Butanone (MEK)	<5.000	50.00	45.72	91	51-113	ug/L	
Carbon Disulfide	<1.000	50.00	46.33	93	71-132	ug/L	
Carbon tetrachloride	<1.000	50.00	46.20	92	85-125	ug/L	
Chlorobenzene	<1.000	50.00	45.15	90	80-116	ug/L	
Chloroethane	<1.000	50.00	41.31	83	58-115	ug/L	
Chloroform	<1.000	50.00	45.50	91	81-113	ug/L	
Chloromethane	<1.000	50.00	40.33	81	48-132	ug/L	
Cyclohexane	<1.000	50.00	44.93	90	81-125	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	42.37	85	63-122	ug/L	
Dibromochloromethane	<1.000	50.00	47.22	94	84-120	ug/L	
1,2-Dibromoethane	<1.000	50.00	46.77	94	82-122	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.36	89	79-122	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	43.85	88	79-122	ug/L	
Dichlorodifluoromethane	<1.000	50.00	32.46	65	73-126	ug/L	L
1,4-Dichlorobenzene	<1.000	50.00	43.49	87	79-119	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.67	91	70-121	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.26	91	78-118	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	46.86	94	76-116	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.69	91	71-124	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.87	94	79-121	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	45.49	91	83-123	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	45.12	90	82-125	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	45.34	91	74-118	ug/L	
Ethylbenzene	<1.000	50.00	46.26	93	85-120	ug/L	
2-Hexanone (MBK)	<5.000	50.00	47.72	95	51-126	ug/L	
Isopropylbenzene	<1.000	50.00	44.10	88	84-125	ug/L	
Methyl Acetate	<1.000	50.00	48.71	97	75-114	ug/L	
Methylcyclohexane	<1.000	50.00	45.35	91	88-124	ug/L	
Methylene chloride	<1.000	50.00	46.42	93	70-117	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	49.64	99	63-112	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	46.81	94	70-127	ug/L	
Naphthalene	<1.000	50.00	45.05	90	71-138	ug/L	
Styrene	<1.000	50.00	47.21	94	78-121	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.71	87	70-118	ug/L	
Tetrachloroethene	<1.000	50.00	45.57	91	83-113	ug/L	
Toluene	<1.000	50.00	45.61	91	85-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	46.81	94	80-134	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	48.15	96	83-134	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.84	92	84-122	ug/L	
Trichloroethene	<1.000	50.00	46.59	93	82-117	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	46.83	94	82-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	42.39	85	71-123	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	43.96	88	72-126	ug/L	
Vinyl chloride	<1.000	50.00	41.23	82	75-113	ug/L	
m&p-Xylene	<2.000	100	91.78	92	87-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042705

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 184021
Matrix: Water
Date Prep: 05/05/21
MB Sample Id: 85966-1-BLK
LCS Sample Id: 85966-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	45.27	91	87-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	99		97		88-112	%
Dibromofluoromethane	99		99		93-111	%
Toluene-D8	99		101		94-107	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 183813 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/27/21 13:34

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05116	102	54-148	mg/L	
Chloromethane	0.05000	0.05149	103	57-135	mg/L	
Vinyl Chloride	0.05000	0.05159	103	64-129	mg/L	
Bromomethane	0.05000	0.05014	100	67-132	mg/L	
Chloroethane	0.05000	0.04918	98	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05206	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05245	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05148	103	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05248	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05193	104	76-127	mg/L	
Chloroform	0.05000	0.05214	104	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05401	108	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05383	108	73-130	mg/L	
Benzene	0.05000	0.05208	104	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05172	103	77-129	mg/L	
Trichloroethene	0.05000	0.05311	106	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05311	106	74-129	mg/L	
Bromodichloromethane	0.05000	0.05446	109	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05243	105	76-116	mg/L	
Toluene	0.05000	0.05177	104	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05259	105	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05262	105	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05305	106	78-128	mg/L	
Dibromochloromethane	0.05000	0.05603	112	70-132	mg/L	
Chlorobenzene	0.05000	0.05311	106	72-128	mg/L	
Ethylbenzene	0.05000	0.05519	110	69-131	mg/L	
Bromoform	0.05000	0.05136	103	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05290	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05459	109	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05427	109	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05487	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	100	85-147	%	
Toluene-D8	99	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 184130 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 05/10/21 15:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.83	99	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042705

Analytical Method: SW-846 8260 B-Modified

Seq Number: 184130 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/21 14:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.78	99	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 184021 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 05/05/21 09:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	43.34	87	80-120	ug/L	
Benzene	50.00	46.17	92	80-120	ug/L	
Bromochloromethane	50.00	48.29	97	80-120	ug/L	
Bromodichloromethane	50.00	47.16	94	80-120	ug/L	
Bromoform	50.00	44.04	88	80-120	ug/L	
Bromomethane	50.00	40.32	81	80-120	ug/L	
2-Butanone (MEK)	50.00	45.72	91	80-120	ug/L	
Carbon Disulfide	50.00	46.33	93	80-120	ug/L	
Carbon tetrachloride	50.00	46.20	92	80-120	ug/L	
Chlorobenzene	50.00	45.15	90	80-120	ug/L	
Chloroethane	50.00	41.31	83	80-120	ug/L	
Chloroform	50.00	45.50	91	80-120	ug/L	
Chloromethane	50.00	40.33	81	80-120	ug/L	
Cyclohexane	50.00	44.93	90	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	42.37	85	80-120	ug/L	
Dibromochloromethane	50.00	47.22	94	80-120	ug/L	
1,2-Dibromoethane	50.00	46.77	94	80-120	ug/L	
1,2-Dichlorobenzene	50.00	44.36	89	80-120	ug/L	
1,3-Dichlorobenzene	50.00	43.85	88	80-120	ug/L	
Dichlorodifluoromethane	50.00	32.46	65	80-120	ug/L	X
1,4-Dichlorobenzene	50.00	43.49	87	80-120	ug/L	
1,1-Dichloroethane	50.00	45.67	91	80-120	ug/L	
1,2-Dichloroethane	50.00	45.26	91	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	46.86	94	80-120	ug/L	
1,1-Dichloroethene	50.00	45.69	91	80-120	ug/L	
1,2-Dichloropropane	50.00	46.87	94	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	45.49	91	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	45.12	90	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	45.34	91	80-120	ug/L	
Ethylbenzene	50.00	46.26	93	80-120	ug/L	
2-Hexanone (MBK)	50.00	47.72	95	80-120	ug/L	
Isopropylbenzene	50.00	44.10	88	80-120	ug/L	
Methyl Acetate	50.00	48.71	97	80-120	ug/L	
Methylcyclohexane	50.00	45.35	91	80-120	ug/L	
Methylene chloride	50.00	46.42	93	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	49.64	99	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	46.81	94	80-120	ug/L	
Naphthalene	50.00	45.05	90	80-120	ug/L	
Styrene	50.00	47.21	94	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	43.71	87	80-120	ug/L	
Tetrachloroethene	50.00	45.57	91	80-120	ug/L	
Toluene	50.00	45.61	91	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	46.81	94	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	48.15	96	80-120	ug/L	
1,1,1-Trichloroethane	50.00	45.84	92	80-120	ug/L	
Trichloroethene	50.00	46.59	93	80-120	ug/L	
1,1,2-Trichloroethane	50.00	46.83	94	80-120	ug/L	
Trichlorofluoromethane	50.00	42.39	85	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	43.96	88	80-120	ug/L	
Vinyl chloride	50.00	41.23	82	80-120	ug/L	
m&p-Xylene	100	91.78	92	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042705

Analytical Method: SW-846 8260 D

Seq Number: 184021 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 05/05/21 09:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	45.27	91	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	97	80-120	%	
Dibromofluoromethane	99	80-120	%	
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 183812 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/27/21 13:34

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	48.12	96	70-130	ug/L	
Benzene	50.00	52.08	104	70-130	ug/L	
Bromochloromethane	50.00	53.03	106	70-130	ug/L	
Bromodichloromethane	50.00	54.46	109	70-130	ug/L	
Bromoform	50.00	51.36	103	70-130	ug/L	
Bromomethane	50.00	50.14	100	70-130	ug/L	
2-Butanone (MEK)	50.00	49.30	99	70-130	ug/L	
Carbon Disulfide	50.00	54.14	108	70-130	ug/L	
Carbon tetrachloride	50.00	53.83	108	70-130	ug/L	
Chlorobenzene	50.00	53.11	106	70-130	ug/L	
Chloroethane	50.00	49.18	98	70-130	ug/L	
Chloroform	50.00	52.14	104	70-130	ug/L	
Chloromethane	50.00	51.49	103	70-130	ug/L	
Cyclohexane	50.00	53.70	107	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	51.28	103	70-130	ug/L	
Dibromochloromethane	50.00	56.03	112	70-130	ug/L	
1,2-Dibromoethane	50.00	54.51	109	70-130	ug/L	
1,2-Dichlorobenzene	50.00	54.87	110	70-130	ug/L	
1,3-Dichlorobenzene	50.00	54.59	109	70-130	ug/L	
Dichlorodifluoromethane	50.00	51.16	102	70-130	ug/L	
1,4-Dichlorobenzene	50.00	54.27	109	70-130	ug/L	
1,1-Dichloroethane	50.00	51.93	104	70-130	ug/L	
1,2-Dichloroethane	50.00	51.72	103	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	52.79	106	70-130	ug/L	
1,1-Dichloroethene	50.00	52.45	105	70-130	ug/L	
1,2-Dichloropropane	50.00	53.11	106	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	52.43	105	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	52.59	105	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	52.48	105	70-130	ug/L	
Ethylbenzene	50.00	55.19	110	70-130	ug/L	
2-Hexanone (MBK)	50.00	51.99	104	70-130	ug/L	
Isopropylbenzene	50.00	56.41	113	70-130	ug/L	
Methyl Acetate	50.00	52.18	104	70-130	ug/L	
Methylcyclohexane	50.00	54.31	109	70-130	ug/L	
Methylene chloride	50.00	51.48	103	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.18	106	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	52.89	106	70-130	ug/L	
Naphthalene	50.00	54.32	109	70-130	ug/L	
Styrene	50.00	57.12	114	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	52.90	106	70-130	ug/L	
Tetrachloroethene	50.00	53.05	106	70-130	ug/L	
Toluene	50.00	51.77	104	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	59.10	118	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	60.63	121	70-130	ug/L	
1,1,1-Trichloroethane	50.00	54.01	108	70-130	ug/L	
Trichloroethene	50.00	53.11	106	70-130	ug/L	
1,1,2-Trichloroethane	50.00	52.62	105	70-130	ug/L	
Trichlorofluoromethane	50.00	52.06	104	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	52.69	105	70-130	ug/L	
Vinyl chloride	50.00	51.59	103	70-130	ug/L	
m&p-Xylene	100	110.2	110	70-130	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21042705

Analytical Method: SW-846 8260 D

Seq Number: 183812 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/27/21 13:34

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	54.40	109	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	100	70-130	%	
Dibromofluoromethane	100	70-130	%	
Toluene-D8	99	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2104270J | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannan Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1	1									Preservative Codes
							Analysis/ Method Required ③	1,4-dioxane (8260B SIM)	VOCs (8260B)	VOCs (624)									
1	Effluent VSP-4	4/27/21	1220	WW	3	G		X											
2	Influent VSP-1	4/27/21	1235	GW	6	G		X	X										
3	TB-042721				4	—		X		X									Trip blank

1 - HCL
2 - H_2SO_4
3 - HNO_3
4 - NaOH
5 - E624KIT
6 - ICE
7 - Sodium Thiosulfate
8 - Ascorbic Acid
9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
	4/27/21	1315	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB< 2.9°C

Custody Seal: Collected

Coolers: 1 Temp: 3.1-3.5°C

Shipping Carrier: FIR

Special Instructions:
Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21042705

Client Name WSP USA - Herndon
Disposal Date 06/01/2021

Received By Thomas Wingate
Date Received 04/27/2021 01:15:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	3.5
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 04/27/2021

PM Review and Approval: Amber Confer — Date: 04/28/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052706

June 11, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21052706**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21052706**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 1, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21052706

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/27/2021 at 12:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21052706-001	Effluent VSP-4	WASTE WATER	05/27/21 11:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052706

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/27/2021 11:00** **PSS Sample ID: 21052706-001**
Matrix: WASTE WATER **Date/Time Received: 05/27/2021 12:30**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.3**	ug/L	1.0		1	05/28/21	05/28/21 16:38	1064
Lead	ND	ug/L	1.0		1	05/28/21	05/28/21 16:38	1064
Nickel	**10.7**	ug/L	1.00		1	05/28/21	05/28/21 16:38	1064
Zinc	**26.3**	ug/L	20.0		1	05/28/21	05/28/21 16:38	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.6**	ug/L	1.0		1	05/28/21	05/28/21 19:04	1064
Lead	ND	ug/L	1.0		1	05/28/21	05/28/21 19:04	1064
Nickel	**9.2**	ug/L	1.0		1	05/28/21	05/28/21 19:04	1064
Zinc	**23.2**	ug/L	20.0		1	05/28/21	05/28/21 19:04	1064

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Chloromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Bromomethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Chloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Methylene Chloride	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Chloroform	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Benzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Trichloroethene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052706

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/27/2021 11:00** **PSS Sample ID: 21052706-001**
Matrix: WASTE WATER **Date/Time Received: 05/27/2021 12:30**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Toluene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Chlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Ethylbenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Bromoform	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:35	1011
Surrogate(s)	***Recovery***		***Limits***					
Dibromofluoromethane	*102*	*%*	*87-120*		*1*	*06/02/21*	*06/02/21 12:35*	*1011*
4-Bromofluorobenzene	*94*	*%*	*85-147*		*1*	*06/02/21*	*06/02/21 12:35*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*06/02/21*	*06/02/21 12:35*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**20**	mg/L	0.66		1	05/28/21	05/28/21 16:38	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	05/27/21	05/27/21 15:45	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052706

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/27/2021 11:00** **PSS Sample ID: 21052706-001**
Matrix: WASTE WATER **Date/Time Received: 05/27/2021 12:30**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 27-May-21 15:45

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		06/01/21	06/01/21 16:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21052706

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21052706: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21052706

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21052706-001	W	86285	184646	05/28/2021 11:06	05/28/2021 16:38
	86285-1-BKS	BKS	86285-1-BKS	W	86285	184646	05/28/2021 11:06	05/28/2021 16:20
	86285-1-BLK	BLK	86285-1-BLK	W	86285	184646	05/28/2021 11:06	05/28/2021 16:16
	Effluent VSP-4 S	MS	21052706-001 S	W	86285	184646	05/28/2021 11:06	05/28/2021 16:43
	Effluent VSP-4 SD	MSD	21052706-001 S	W	86285	184646	05/28/2021 11:06	05/28/2021 16:47
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21052706-001	W	86290	184648	05/28/2021 16:17	05/28/2021 19:04
	86290-1-BKS	BKS	86290-1-BKS	W	86290	184648	05/28/2021 16:17	05/28/2021 18:59
	86290-1-BLK	BLK	86290-1-BLK	W	86290	184648	05/28/2021 16:17	05/28/2021 18:55
	Effluent VSP-4 S	MS	21052706-001 S	W	86290	184648	05/28/2021 16:17	05/28/2021 19:08
	Effluent VSP-4 SD	MSD	21052706-001 S	W	86290	184648	05/28/2021 16:17	05/28/2021 19:13
EPA 624 .1	Effluent VSP-4	Initial	21052706-001	W	86336	184741	06/02/2021 09:27	06/02/2021 12:35
	86336-1-BKS	BKS	86336-1-BKS	W	86336	184741	06/02/2021 09:27	06/02/2021 09:49
	86336-1-BLK	BLK	86336-1-BLK	W	86336	184741	06/02/2021 09:27	06/02/2021 11:05
	13753-EFF-5/21 S	MS	21052808-001 S	W	86336	184741	06/02/2021 09:27	06/02/2021 15:13
	13753-EFF-5/21 SD	MSD	21052808-001 S	W	86336	184741	06/02/2021 09:27	06/02/2021 15:36
SM 2340B	Effluent VSP-4	Initial	21052706-001	W	86285	184781	05/28/2021 11:06	05/28/2021 16:38
SM 2540D -2011	Effluent VSP-4	Initial	21052706-001	W	184630	184630	05/27/2021 15:45	05/27/2021 15:45
	184630-1-BKS	BKS	184630-1-BKS	W	184630	184630	05/27/2021 15:45	05/27/2021 15:45
	184630-1-BLK	BLK	184630-1-BLK	W	184630	184630	05/27/2021 15:45	05/27/2021 15:45
	TSS D	MD	21052620-001 D	W	184630	184630	05/27/2021 15:45	05/27/2021 15:45
SM 5210B -2011	Effluent VSP-4	Initial	21052706-001	W	184787	184787	06/01/2021 16:00	06/01/2021 16:00

PHASE SEPARATION SCIENCE

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21052706

Analytical Method: SM 2540D -2011
Seq Number: 184630 Matrix: Water
MB Sample Id: 184630-1-BLK LCS Sample Id: 184630-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	99.20	98.60	99	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 184646 Matrix: Water Date Prep: 05/28/21
MB Sample Id: 86285-1-BLK LCS Sample Id: 86285-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.01	100	85-115	ug/L	
Lead	<1.000	40.00	39.64	99	85-115	ug/L	
Nickel	<1.000	40.00	38.40	96	85-115	ug/L	
Zinc	<20.00	200	188.7	94	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 184646 Matrix: Waste Water Date Prep: 05/28/21
Parent Sample Id: 21052706-001 MS Sample Id: 21052706-001 S MSD Sample Id: 21052706-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.278	40.00	41.50	98	41.37	98	70-130	0	25	ug/L	
Lead	<1.000	40.00	39.35	98	39.15	98	70-130	0	25	ug/L	
Nickel	10.69	40.00	48.61	95	49.05	96	70-130	1	25	ug/L	
Zinc	26.29	200	214.6	94	213.2	93	70-130	1	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 184648 Matrix: Water Date Prep: 05/28/21
MB Sample Id: 86290-1-BLK LCS Sample Id: 86290-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.44	99	85-115	ug/L	
Lead	<1.000	40.00	40.27	101	85-115	ug/L	
Nickel	<1.000	40.00	38.04	95	85-115	ug/L	
Zinc	<20.00	200	187.6	94	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21052706

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 184648 Matrix: Waste Water Date Prep: 05/28/21
Parent Sample Id: 21052706-001 MS Sample Id: 21052706-001 S MSD Sample Id: 21052706-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.616	40.00	39.53	95	39.85	96	70-130	1	25	ug/L	
Lead	<1.000	40.00	39.47	99	39.56	99	70-130	0	25	ug/L	
Nickel	9.229	40.00	46.63	94	46.52	93	70-130	1	25	ug/L	
Zinc	23.21	200	212.7	95	213.4	95	70-130	0	25	ug/L	

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 184741 Matrix: Water Date Prep: 06/02/21
MB Sample Id: 86336-1-BLK LCS Sample Id: 86336-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	37.00	74	54-148	ug/L	
Chloromethane	<1.000	50.00	41.54	83	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.36	79	5-195	ug/L	
Bromomethane	<1.000	50.00	46.76	94	15-185	ug/L	
Chloroethane	<1.000	50.00	41.61	83	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	42.31	85	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.37	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.89	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.76	98	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.19	94	70-130	ug/L	
Chloroform	<1.000	50.00	47.86	96	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.41	95	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.42	95	70-130	ug/L	
Benzene	<1.000	50.00	48.88	98	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.86	92	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.76	98	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.63	97	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	49.42	99	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.18	94	25-175	ug/L	
Toluene	<1.000	50.00	49.12	98	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	46.68	93	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.56	99	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	51.30	103	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	51.78	104	70-135	ug/L	
Chlorobenzene	<1.000	50.00	50.01	100	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.65	99	60-140	ug/L	
Bromoform	<1.000	50.00	49.23	98	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.43	93	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.98	100	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.33	99	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.48	101	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		100		87-120	%
4-Bromofluorobenzene	93		92		85-147	%
Toluene-D8	101		100		88-110	%

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QC Summary

Project Name Kop-Flex

PSS Project No.: 21052706

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21052706

Analytical Method: EPA 200.8
Seq Number: 184646 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 05/28/21 14:31

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.79	102	85-115	ug/L	
Lead	40.00	40.87	102	85-115	ug/L	
Nickel	40.00	40.10	100	85-115	ug/L	
Zinc	200	197.8	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 184646 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 05/28/21 15:30

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.30	101	85-115	ug/L	
Lead	40.00	41.01	103	85-115	ug/L	
Nickel	40.00	39.79	99	85-115	ug/L	
Zinc	200	195.8	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 184646 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 05/28/21 16:29

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.19	100	85-115	ug/L	
Lead	40.00	40.96	102	85-115	ug/L	
Nickel	40.00	39.78	99	85-115	ug/L	
Zinc	200	195.4	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 184646 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 05/28/21 17:28

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.66	102	85-115	ug/L	
Lead	40.00	41.14	103	85-115	ug/L	
Nickel	40.00	39.76	99	85-115	ug/L	
Zinc	200	196	98	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21052706

Analytical Method: EPA 200.8
Seq Number: 184646 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 05/28/21 13:08

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	40.95	102	90-110	ug/L	
Lead	40.00	40.22	101	90-110	ug/L	
Nickel	40.00	40.33	101	90-110	ug/L	
Zinc	200	199.7	100	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 184648 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 05/28/21 18:27

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.21	101	85-115	ug/L	
Lead	40.00	40.78	102	85-115	ug/L	
Nickel	40.00	39.56	99	85-115	ug/L	
Zinc	200	194.2	97	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 184648 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 05/28/21 19:26

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.24	101	85-115	ug/L	
Lead	40.00	40.81	102	85-115	ug/L	
Nickel	40.00	39.97	100	85-115	ug/L	
Zinc	200	195.5	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 184648 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 05/28/21 13:08

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	40.95	102	90-110	ug/L	
Lead	40.00	40.22	101	90-110	ug/L	
Nickel	40.00	40.33	101	90-110	ug/L	
Zinc	200	199.7	100	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21052706

Analytical Method: EPA 624 .1

Seq Number: 183813 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/27/21 13:34

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05116	102	54-148	mg/L	
Chloromethane	0.05000	0.05149	103	57-135	mg/L	
Vinyl Chloride	0.05000	0.05159	103	64-129	mg/L	
Bromomethane	0.05000	0.05014	100	67-132	mg/L	
Chloroethane	0.05000	0.04918	98	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05206	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05245	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05148	103	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05248	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05193	104	76-127	mg/L	
Chloroform	0.05000	0.05214	104	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05401	108	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05383	108	73-130	mg/L	
Benzene	0.05000	0.05208	104	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05172	103	77-129	mg/L	
Trichloroethene	0.05000	0.05311	106	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05311	106	74-129	mg/L	
Bromodichloromethane	0.05000	0.05446	109	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05243	105	76-116	mg/L	
Toluene	0.05000	0.05177	104	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05259	105	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05262	105	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05305	106	78-128	mg/L	
Dibromochloromethane	0.05000	0.05603	112	70-132	mg/L	
Chlorobenzene	0.05000	0.05311	106	72-128	mg/L	
Ethylbenzene	0.05000	0.05519	110	69-131	mg/L	
Bromoform	0.05000	0.05136	103	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05290	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05459	109	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05427	109	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05487	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	100	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (If different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 21052706 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② Analysis/Method Required ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1	3	3								
							VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD								
1	Effluent VSP-4	5/27/21	1100	WW	7	G	X	X	X	X	X								

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	5/27/21	1230	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 2.8°C

Custody Seal: Cooler Intact

Coolers: 1 Temp: 1.5°-2.6°C

Shipping Carrier:

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-Filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21052706

Client Name WSP USA - Herndon
Disposal Date 07/01/2021

Received By Thomas Wingate
Date Received 05/27/2021 12:30:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.6
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 05/27/2021

PM Review and Approval: Amber Confer — Date: 05/27/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052707

June 11, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21052707**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21052707**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 1, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
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800-932-9047
www.phaseonline.com

Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21052707

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/27/2021 at 12:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21052707-001	Effluent VSP-4	WASTE WATER	05/27/21 11:00
21052707-002	TB-052721	WATER	05/27/21 10:23

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052707

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/27/2021 11:00** **PSS Sample ID: 21052707-001**
Matrix: WASTE WATER **Date/Time Received: 05/27/2021 12:30**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	06/09/21	06/09/21 14:26	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*97*	*%*	*80-120*		*1*	*06/09/21*	*06/09/21 14:26*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052707

Sample ID: TB-052721 **Date/Time Sampled: 05/27/2021 10:23** **PSS Sample ID: 21052707-002**
Matrix: WATER **Date/Time Received: 05/27/2021 12:30**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Chloromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Bromomethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Chloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Methylene Chloride	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Chloroform	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Benzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Trichloroethene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Toluene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Chlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Ethylbenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
Bromoform	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/02/21	06/02/21 12:13	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*102*	*%*	*87-120*	*1*	*06/02/21*	*06/02/21 12:13*	*1011*
4-Bromofluorobenzene	*96*	*%*	*85-147*	*1*	*06/02/21*	*06/02/21 12:13*	*1011*
Toluene-D8	*99*	*%*	*88-110*	*1*	*06/02/21*	*06/02/21 12:13*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21052707

Sample ID: TB-052721 **Date/Time Sampled: 05/27/2021 10:23** **PSS Sample ID: 21052707-002**
Matrix: WATER **Date/Time Received: 05/27/2021 12:30**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	06/09/21	06/09/21 14:49	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*99*	*%*	*80-120*		*1*	*06/09/21*	*06/09/21 14:49*	*1011*

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21052707

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-052721	Initial	21052707-002	W	86336	184741	06/02/2021 09:27	06/02/2021 12:13
	86336-1-BKS	BKS	86336-1-BKS	W	86336	184741	06/02/2021 09:27	06/02/2021 09:49
	86336-1-BLK	BLK	86336-1-BLK	W	86336	184741	06/02/2021 09:27	06/02/2021 11:05
	13753-EFF-5/21 S	MS	21052808-001 S	W	86336	184741	06/02/2021 09:27	06/02/2021 15:13
	13753-EFF-5/21 SD	MSD	21052808-001 S	W	86336	184741	06/02/2021 09:27	06/02/2021 15:36
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21052707-001	W	86442	184915	06/09/2021 11:27	06/09/2021 14:26
	TB-052721	Initial	21052707-002	W	86442	184915	06/09/2021 11:27	06/09/2021 14:49
	86442-1-BKS	BKS	86442-1-BKS	W	86442	184915	06/09/2021 11:27	06/09/2021 12:57
	86442-1-BLK	BLK	86442-1-BLK	W	86442	184915	06/09/2021 11:27	06/09/2021 14:04
	86442-1-BSD	BSD	86442-1-BSD	W	86442	184915	06/09/2021 11:27	06/09/2021 13:20

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 184741 Matrix: Water Date Prep: 06/02/21
MB Sample Id: 86336-1-BLK LCS Sample Id: 86336-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	37.00	74	54-148	ug/L	
Chloromethane	<1.000	50.00	41.54	83	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.36	79	5-195	ug/L	
Bromomethane	<1.000	50.00	46.76	94	15-185	ug/L	
Chloroethane	<1.000	50.00	41.61	83	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	42.31	85	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.37	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.89	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.76	98	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.19	94	70-130	ug/L	
Chloroform	<1.000	50.00	47.86	96	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.41	95	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.42	95	70-130	ug/L	
Benzene	<1.000	50.00	48.88	98	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.86	92	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.76	98	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.63	97	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	49.42	99	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.18	94	25-175	ug/L	
Toluene	<1.000	50.00	49.12	98	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	46.68	93	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.56	99	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	51.30	103	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	51.78	104	70-135	ug/L	
Chlorobenzene	<1.000	50.00	50.01	100	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.65	99	60-140	ug/L	
Bromoform	<1.000	50.00	49.23	98	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.43	93	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.98	100	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.33	99	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.48	101	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		100		87-120	%
4-Bromofluorobenzene	93		92		85-147	%
Toluene-D8	101		100		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 184915 Matrix: Water Date Prep: 06/09/21
MB Sample Id: 86442-1-BLK LCS Sample Id: 86442-1-BKS LCSD Sample Id: 86442-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	28.94	96	29.64	99	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	97		99		98		80-120	%

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QC Summary

Project Name Kop-Flex

PSS Project No.: 21052707

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 183813 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/27/21 13:34

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05116	102	54-148	mg/L	
Chloromethane	0.05000	0.05149	103	57-135	mg/L	
Vinyl Chloride	0.05000	0.05159	103	64-129	mg/L	
Bromomethane	0.05000	0.05014	100	67-132	mg/L	
Chloroethane	0.05000	0.04918	98	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05206	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05245	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05148	103	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05248	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05193	104	76-127	mg/L	
Chloroform	0.05000	0.05214	104	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05401	108	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05383	108	73-130	mg/L	
Benzene	0.05000	0.05208	104	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05172	103	77-129	mg/L	
Trichloroethene	0.05000	0.05311	106	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05311	106	74-129	mg/L	
Bromodichloromethane	0.05000	0.05446	109	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05243	105	76-116	mg/L	
Toluene	0.05000	0.05177	104	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05259	105	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05262	105	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05305	106	78-128	mg/L	
Dibromochloromethane	0.05000	0.05603	112	70-132	mg/L	
Chlorobenzene	0.05000	0.05311	106	72-128	mg/L	
Ethylbenzene	0.05000	0.05519	110	69-131	mg/L	
Bromoform	0.05000	0.05136	103	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05290	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05459	109	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05427	109	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05487	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	100	85-147	%	
Toluene-D8	99	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 184130 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 05/10/21 15:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.83	99	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21052707

Analytical Method: SW-846 8260 B-Modified
Seq Number: 184915 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 06/09/21 12:25

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.26	91	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	102	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 184130 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/21 14:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.78	99	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21052707 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1										Analysis/ Method Required ③ 1,4-dioxane (8260B SIM)	VOCs (624)	
1	Effluent VSP-4	5/27/21	1100	WW	3	G		X													
2	TB-052721	5/27/21			4	—		X	X												Trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	5/27/21	1230	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)

☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: RCE TB: 0.8°C

Custody Seal: Cooler Intact

Coolers: 1 Temp: 1.5°-2.6°C

Shipping Carrier: CLNA

Special Instructions:
Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21052707

Client Name WSP USA - Herndon
Disposal Date 07/01/2021

Received By Thomas Wingate
Date Received 05/27/2021 12:30:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.6
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 05/27/2021

PM Review and Approval: Amber Confer — Date: 05/27/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062417

July 9, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21062417**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21062417**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 29, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21062417

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/24/2021 at 01:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21062417-001	Effluent VSP-4	WASTE WATER	06/24/21 11:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062417

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/24/2021 11:00** **PSS Sample ID: 21062417-001**
Matrix: WASTE WATER **Date/Time Received: 06/24/2021 13:30**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	06/25/21	06/25/21 22:41	1064
Lead	ND	ug/L	1.0		1	06/25/21	06/25/21 22:41	1064
Nickel	**8.6**	ug/L	1.0		1	06/25/21	06/25/21 22:41	1064
Zinc	**22.2**	ug/L	20.0		1	06/25/21	06/25/21 22:41	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	06/29/21	06/30/21 16:03	1064
Lead	ND	ug/L	1.0		1	06/29/21	06/30/21 16:03	1064
Nickel	**8.4**	ug/L	1.0		1	06/29/21	06/30/21 16:03	1064
Zinc	ND	ug/L	20		1	06/29/21	06/30/21 16:03	1064

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Chloromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Bromomethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Chloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Methylene Chloride	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Chloroform	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Benzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Trichloroethene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062417

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/24/2021 11:00** **PSS Sample ID: 21062417-001**
Matrix: WASTE WATER **Date/Time Received: 06/24/2021 13:30**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Toluene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Chlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Ethylbenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
Bromoform	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:19	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*99*	*%*	*87-120*		*1*	*06/25/21*	*06/25/21 12:19*	*1011*
4-Bromofluorobenzene	*96*	*%*	*85-147*		*1*	*06/25/21*	*06/25/21 12:19*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*06/25/21*	*06/25/21 12:19*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**20**	mg/L	0.66		1	06/25/21	06/25/21 22:41	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	**2.0**	mg/L	1.0		1	06/26/21	06/26/21 14:30	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062417

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/24/2021 11:00** **PSS Sample ID: 21062417-001**
Matrix: WASTE WATER **Date/Time Received: 06/24/2021 13:30**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 25-Jun-21 15:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		06/25/21	06/30/21 10:40	4005

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Project Name: Kop-Flex

PSS Project No.: 21062417

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21062417: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21062417

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21062417-001	W	86660	185413	06/25/2021 12:15	06/25/2021 22:41
	86660-1-BKS	BKS	86660-1-BKS	W	86660	185413	06/25/2021 12:15	06/25/2021 21:22
	86660-1-BLK	BLK	86660-1-BLK	W	86660	185413	06/25/2021 12:15	06/25/2021 21:03
	RW-01R-06232021 S	MS	21062334-001 S	W	86660	185413	06/25/2021 12:15	06/25/2021 21:31
	Effluent VSP-4 S	MS	21062417-001 S	W	86660	185413	06/25/2021 12:15	06/25/2021 22:46
	RW-01R-06232021 SD	MSD	21062334-001 S	W	86660	185413	06/25/2021 12:15	06/25/2021 21:36
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21062417-001	W	86715	185537	06/29/2021 14:15	06/30/2021 16:03
	86715-1-BKS	BKS	86715-1-BKS	W	86715	185537	06/29/2021 14:15	06/30/2021 15:58
	86715-1-BLK	BLK	86715-1-BLK	W	86715	185537	06/29/2021 14:15	06/30/2021 15:53
	Effluent VSP-4 S	MS	21062417-001 S	W	86715	185537	06/29/2021 14:15	06/30/2021 16:07
	Effluent VSP-4 SD	MSD	21062417-001 S	W	86715	185537	06/29/2021 14:15	06/30/2021 16:12
EPA 624 .1	Effluent VSP-4	Initial	21062417-001	W	86662	185370	06/25/2021 06:55	06/25/2021 12:19
	86662-1-BKS	BKS	86662-1-BKS	W	86662	185370	06/25/2021 06:55	06/25/2021 07:18
	86662-1-BLK	BLK	86662-1-BLK	W	86662	185370	06/25/2021 06:55	06/25/2021 08:33
	S-1 S	MS	21062330-001 S	W	86662	185370	06/25/2021 06:55	06/25/2021 10:04
	S-1 SD	MSD	21062330-001 S	W	86662	185370	06/25/2021 06:55	06/25/2021 10:26
SM 2340B	Effluent VSP-4	Initial	21062417-001	W	86684	185414	06/25/2021 12:15	06/25/2021 22:41
SM 2540D -2011	Effluent VSP-4	Initial	21062417-001	W	185393	185393	06/26/2021 14:30	06/26/2021 14:30
	185393-1-BKS	BKS	185393-1-BKS	W	185393	185393	06/26/2021 14:30	06/26/2021 14:30
	185393-1-BLK	BLK	185393-1-BLK	W	185393	185393	06/26/2021 14:30	06/26/2021 14:30
	Outfall - 007 D	MD	21062328-001 D	W	185393	185393	06/26/2021 14:30	06/26/2021 14:30
SM 5210B -2011	Effluent VSP-4	Initial	21062417-001	W	185720	185720	06/25/2021 15:00	06/30/2021 10:40

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21062417

Analytical Method: SM 2540D -2011
Seq Number: 185393 Matrix: Water
MB Sample Id: 185393-1-BLK LCS Sample Id: 185393-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	103.9	104.3	100	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 185413 Matrix: Water Date Prep: 06/25/21
MB Sample Id: 86660-1-BLK LCS Sample Id: 86660-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.66	104	85-115	ug/L	
Lead	<1.000	40.00	36.97	92	85-115	ug/L	
Nickel	<1.000	40.00	40.52	101	85-115	ug/L	
Zinc	<20.00	200	200.3	100	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 185413 Matrix: Waste Water Date Prep: 06/25/21
Parent Sample Id: 21062417-001 MS Sample Id: 21062417-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.44	99	70-130	ug/L	
Lead	<1.000	40.00	36.15	90	70-130	ug/L	
Nickel	8.604	40.00	48.08	99	70-130	ug/L	
Zinc	22.18	200	218.3	98	70-130	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 185537 Matrix: Water Date Prep: 06/29/21
MB Sample Id: 86715-1-BLK LCS Sample Id: 86715-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.75	102	85-115	ug/L	
Lead	<1.000	40.00	43.89	110	85-115	ug/L	
Nickel	<1.000	40.00	40.43	101	85-115	ug/L	
Zinc	<20.00	200	201.1	101	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21062417

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 185537 Matrix: Waste Water Date Prep: 06/29/21
Parent Sample Id: 21062417-001 MS Sample Id: 21062417-001 S MSD Sample Id: 21062417-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	40.47	101	40.35	101	70-130	0	25	ug/L	
Lead	<1.000	40.00	42.97	107	43.09	108	70-130	1	25	ug/L	
Nickel	8.358	40.00	47.28	97	47.59	98	70-130	1	25	ug/L	
Zinc	<20.00	200	217	109	217.3	109	70-130	0	25	ug/L	

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 185370 Matrix: Water Date Prep: 06/25/21
MB Sample Id: 86662-1-BLK LCS Sample Id: 86662-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	63.71	127	54-148	ug/L	
Chloromethane	<1.000	50.00	50.42	101	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	56.70	113	5-195	ug/L	
Bromomethane	<1.000	50.00	45.21	90	15-185	ug/L	
Chloroethane	<1.000	50.00	53.86	108	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	59.62	119	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.59	101	50-150	ug/L	
Methylene Chloride	<1.000	50.00	50.54	101	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	53.08	106	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.12	102	70-130	ug/L	
Chloroform	<1.000	50.00	53.62	107	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	54.55	109	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	52.72	105	70-130	ug/L	
Benzene	<1.000	50.00	51.37	103	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	51.49	103	70-130	ug/L	
Trichloroethene	<1.000	50.00	52.80	106	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.02	100	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.12	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.85	98	25-175	ug/L	
Toluene	<1.000	50.00	52.63	105	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.45	101	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.15	104	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	56.01	112	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	54.93	110	70-135	ug/L	
Chlorobenzene	<1.000	50.00	52.39	105	65-135	ug/L	
Ethylbenzene	<1.000	50.00	52.19	104	60-140	ug/L	
Bromoform	<1.000	50.00	52.17	104	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.63	105	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	54.74	109	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	54.85	110	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	54.97	110	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	98		102		87-120	%
4-Bromofluorobenzene	97		96		85-147	%
Toluene-D8	101		101		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 185413 Matrix: Water
CCV Sample Id: CCV 7 Analyzed Date: 06/25/21 20:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	43.61	109	85-115	ug/L	
Lead	40.00	38.94	97	85-115	ug/L	
Nickel	40.00	44.29	111	85-115	ug/L	
Zinc	200	221.1	111	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 185413 Matrix: Water
CCV Sample Id: CCV 8 Analyzed Date: 06/25/21 21:12

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	44.10	110	85-115	ug/L	
Lead	40.00	39.29	98	85-115	ug/L	
Nickel	40.00	44.55	111	85-115	ug/L	
Zinc	200	222.5	111	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 185413 Matrix: Water
CCV Sample Id: CCV 9 Analyzed Date: 06/25/21 22:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.94	105	85-115	ug/L	
Lead	40.00	39.75	99	85-115	ug/L	
Nickel	40.00	42.72	107	85-115	ug/L	
Zinc	200	213.8	107	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 185413 Matrix: Water
CCV Sample Id: CCV 10 Analyzed Date: 06/25/21 23:00

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	42.24	106	85-115	ug/L	
Lead	40.00	39.57	99	85-115	ug/L	
Nickel	40.00	42.55	106	85-115	ug/L	
Zinc	200	214.5	107	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 185413 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 06/25/21 12:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	41.42	104	90-110	ug/L	
Lead	40.00	41.42	104	90-110	ug/L	
Nickel	40.00	40.98	102	90-110	ug/L	
Zinc	200	205.4	103	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 185537 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 06/30/21 16:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.70	102	85-115	ug/L	
Lead	40.00	43.10	108	85-115	ug/L	
Nickel	40.00	40.25	101	85-115	ug/L	
Zinc	200	199	100	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 185537 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 06/30/21 15:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	40.51	101	90-110	ug/L	
Lead	40.00	43.52	109	90-110	ug/L	
Nickel	40.00	40.45	101	90-110	ug/L	
Zinc	200	195.9	98	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21062417

Analytical Method: EPA 624 .1

Seq Number: 185084 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 06/15/21 14:13

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05284	106	54-148	mg/L	
Chloromethane	0.05000	0.05265	105	57-135	mg/L	
Vinyl Chloride	0.05000	0.05147	103	64-129	mg/L	
Bromomethane	0.05000	0.04282	86	67-132	mg/L	
Chloroethane	0.05000	0.05132	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05234	105	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05419	108	67-126	mg/L	
Methylene Chloride	0.05000	0.05126	103	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05269	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05248	105	76-127	mg/L	
Chloroform	0.05000	0.05152	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05444	109	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05311	106	73-130	mg/L	
Benzene	0.05000	0.05173	103	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05008	100	77-129	mg/L	
Trichloroethene	0.05000	0.05175	104	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05223	104	74-129	mg/L	
Bromodichloromethane	0.05000	0.05205	104	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05040	101	76-116	mg/L	
Toluene	0.05000	0.05243	105	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05205	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05160	103	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05351	107	78-128	mg/L	
Dibromochloromethane	0.05000	0.05346	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05203	104	72-128	mg/L	
Ethylbenzene	0.05000	0.05307	106	69-131	mg/L	
Bromoform	0.05000	0.04983	100	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05318	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05381	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05322	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05333	107	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	99	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2106241 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/09

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1	3	3								
							Analysis/ Method Required ③	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD							
	Effluent VSP-4	6/24/21	1100	WW	7	G		X	X	X	X	X							

⑤ ④

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	6/24/21	1330	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 10.2°C

Custody Seal: Cooler-Direct

Coolers: 1 Temp: 8.1°-8.8°C

Shipping Carrier: Client

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21062417

Client Name WSP USA - Herndon
Disposal Date 07/29/2021

Received By Thomas Wingate
Date Received 06/24/2021 01:30:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	8.8
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 06/24/2021

PM Review and Approval: Amber Confer Date: 06/24/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062418

July 9, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21062418**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21062418**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 29, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21062418

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/24/2021 at 01:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21062418-001	Effluent VSP-4	WASTE WATER	06/24/21 11:00
21062418-002	TB-062421	WATER	06/24/21 12:19
21062418-002	TB-062421	WATER	06/24/21 12:19

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062418

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/24/2021 11:00** **PSS Sample ID: 21062418-001**
Matrix: WASTE WATER **Date/Time Received: 06/24/2021 13:30**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	07/07/21	07/07/21 11:12	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*99*	*%*	*80-120*		*1*	*07/07/21*	*07/07/21 11:12*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062418

Sample ID: TB-062421 **Date/Time Sampled: 06/24/2021 12:19** **PSS Sample ID: 21062418-002**
Matrix: WATER **Date/Time Received: 06/24/2021 13:30**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Chloromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Bromomethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Chloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Methylene Chloride	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Chloroform	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Benzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Trichloroethene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Toluene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Chlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Ethylbenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
Bromoform	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/25/21	06/25/21 12:42	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*99*	*%*	*87-120*	*1*	*06/25/21*	*06/25/21 12:42*	*1011*
4-Bromofluorobenzene	*95*	*%*	*85-147*	*1*	*06/25/21*	*06/25/21 12:42*	*1011*
Toluene-D8	*100*	*%*	*88-110*	*1*	*06/25/21*	*06/25/21 12:42*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21062418

Sample ID: TB-062421 **Date/Time Sampled: 06/24/2021 12:19** **PSS Sample ID: 21062418-002**
Matrix: WATER **Date/Time Received: 06/24/2021 13:30**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	07/07/21	07/07/21 11:35	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*98*	*%*	*80-120*		*1*	*07/07/21*	*07/07/21 11:35*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21062418

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.
COC lists two voa vials for sample 002; received four vials.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21062418

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-062421	Initial	21062418-002	W	86662	185370	06/25/2021 06:55	06/25/2021 12:42
	86662-1-BKS	BKS	86662-1-BKS	W	86662	185370	06/25/2021 06:55	06/25/2021 07:18
	86662-1-BLK	BLK	86662-1-BLK	W	86662	185370	06/25/2021 06:55	06/25/2021 08:33
	S-1 S	MS	21062330-001 S	W	86662	185370	06/25/2021 06:55	06/25/2021 10:04
	S-1 SD	MSD	21062330-001 S	W	86662	185370	06/25/2021 06:55	06/25/2021 10:26
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21062418-001	W	86801	185681	07/07/2021 07:40	07/07/2021 11:12
	TB-062421	Initial	21062418-002	W	86801	185681	07/07/2021 07:40	07/07/2021 11:35
	86801-1-BKS	BKS	86801-1-BKS	W	86801	185681	07/07/2021 07:40	07/07/2021 08:48
	86801-1-BLK	BLK	86801-1-BLK	W	86801	185681	07/07/2021 07:40	07/07/2021 10:41
	86801-1-BSD	BSD	86801-1-BSD	W	86801	185681	07/07/2021 07:40	07/07/2021 09:48

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21062418

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 185370 Matrix: Water Date Prep: 06/25/21
MB Sample Id: 86662-1-BLK LCS Sample Id: 86662-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	63.71	127	54-148	ug/L	
Chloromethane	<1.000	50.00	50.42	101	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	56.70	113	5-195	ug/L	
Bromomethane	<1.000	50.00	45.21	90	15-185	ug/L	
Chloroethane	<1.000	50.00	53.86	108	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	59.62	119	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.59	101	50-150	ug/L	
Methylene Chloride	<1.000	50.00	50.54	101	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	53.08	106	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.12	102	70-130	ug/L	
Chloroform	<1.000	50.00	53.62	107	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	54.55	109	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	52.72	105	70-130	ug/L	
Benzene	<1.000	50.00	51.37	103	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	51.49	103	70-130	ug/L	
Trichloroethene	<1.000	50.00	52.80	106	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.02	100	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.12	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.85	98	25-175	ug/L	
Toluene	<1.000	50.00	52.63	105	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.45	101	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.15	104	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	56.01	112	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	54.93	110	70-135	ug/L	
Chlorobenzene	<1.000	50.00	52.39	105	65-135	ug/L	
Ethylbenzene	<1.000	50.00	52.19	104	60-140	ug/L	
Bromoform	<1.000	50.00	52.17	104	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.63	105	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	54.74	109	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	54.85	110	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	54.97	110	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	98		102		87-120	%
4-Bromofluorobenzene	97		96		85-147	%
Toluene-D8	101		101		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 185681 Matrix: Water Date Prep: 07/07/21
MB Sample Id: 86801-1-BLK LCS Sample Id: 86801-1-BKS LCSD Sample Id: 86801-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	29.61	99	30.38	101	50-150	2	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	100		103		103		80-120	%

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Project Name Kop-Flex
PSS Project No.: 21062418

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 185084 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 06/15/21 14:13

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05284	106	54-148	mg/L	
Chloromethane	0.05000	0.05265	105	57-135	mg/L	
Vinyl Chloride	0.05000	0.05147	103	64-129	mg/L	
Bromomethane	0.05000	0.04282	86	67-132	mg/L	
Chloroethane	0.05000	0.05132	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05234	105	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05419	108	67-126	mg/L	
Methylene Chloride	0.05000	0.05126	103	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05269	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05248	105	76-127	mg/L	
Chloroform	0.05000	0.05152	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05444	109	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05311	106	73-130	mg/L	
Benzene	0.05000	0.05173	103	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05008	100	77-129	mg/L	
Trichloroethene	0.05000	0.05175	104	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05223	104	74-129	mg/L	
Bromodichloromethane	0.05000	0.05205	104	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05040	101	76-116	mg/L	
Toluene	0.05000	0.05243	105	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05205	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05160	103	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05351	107	78-128	mg/L	
Dibromochloromethane	0.05000	0.05346	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05203	104	72-128	mg/L	
Ethylbenzene	0.05000	0.05307	106	69-131	mg/L	
Bromoform	0.05000	0.04983	100	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05318	106	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05381	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05322	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05333	107	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	99	85-147	%	
Toluene-D8	100	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 184130 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 05/10/21 15:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.83	99	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21062418

Analytical Method: SW-846 8260 B-Modified
Seq Number: 185681 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 07/07/21 08:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.13	90	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	105	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 184130 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/21 14:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.78	99	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2106218 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes												Analysis/ Method Required ③
							1	1											VOCs (624) / 1,4-dioxane (8260B SIM)
1	Effluent VSP-4	6/24/21	1100	WW	3	G		X											
2	TB-062421	—	—	—	2	—	X	X											Trip blank

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1)	6/24/21	1330	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 10.2°C

Custody Seal: Coolers Intact

Coolers: 1 Temp: 8.3-9.5°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21062418

Client Name WSP USA - Herndon
Disposal Date 07/29/2021

Received By Thomas Wingate
Date Received 06/24/2021 01:30:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	9.5
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.
COC lists two voa vials for sample 002; received four vials.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 06/24/2021

PM Review and Approval: Amber L Langer — Date: 06/24/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072906

August 12, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21072906**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21072906**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 2, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21072906

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 07/29/2021 at 12:06 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21072906-001	Effluent VSP-4	WASTE WATER	07/29/21 10:45

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072906

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/29/2021 10:45** **PSS Sample ID: 21072906-001**
Matrix: WASTE WATER **Date/Time Received: 07/29/2021 12:06**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.7**	ug/L	1.0		1	08/03/21	08/03/21 17:20	1051
Lead	ND	ug/L	1.0		1	08/03/21	08/03/21 17:20	1051
Nickel	**13.9**	ug/L	1.00		1	08/03/21	08/03/21 17:20	1051
Zinc	**88.2**	ug/L	20.0		1	08/03/21	08/03/21 17:20	1051

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.9**	ug/L	1.0		1	08/02/21	08/03/21 18:23	1051
Lead	ND	ug/L	1.0		1	08/02/21	08/03/21 18:23	1051
Nickel	**14.0**	ug/L	1.00		1	08/02/21	08/03/21 18:23	1051
Zinc	**84.7**	ug/L	20.0		1	08/02/21	08/03/21 18:23	1051

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 186394 on Case Narrative.
pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Chloromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Vinyl Chloride	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Bromomethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Chloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Methylene Chloride	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Chloroform	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Benzene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Trichloroethene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072906

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/29/2021 10:45** **PSS Sample ID: 21072906-001**
Matrix: WASTE WATER **Date/Time Received: 07/29/2021 12:06**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 186394 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Toluene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Tetrachloroethylene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Chlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Ethylbenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
Bromoform	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 18:40	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*100*	*%*	*87-120*		*1*	*07/29/21*	*07/29/21 18:40*	*1011*
4-Bromofluorobenzene	*99*	*%*	*85-147*		*1*	*07/29/21*	*07/29/21 18:40*	*1011*
Toluene-D8	*105*	*%*	*88-110*		*1*	*07/29/21*	*07/29/21 18:40*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**7.4**	mg/L	0.66		1	08/03/21	08/03/21 17:20	1051

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	08/01/21	08/01/21 13:45	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072906

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/29/2021 10:45** **PSS Sample ID: 21072906-001**
Matrix: WASTE WATER **Date/Time Received: 07/29/2021 12:06**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 30-Jul-21 17:10

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		08/04/21	08/04/21 17:30	4005

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Project Name: Kop-Flex

PSS Project No.: 21072906

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21072906: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 186394

Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.16 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21072906

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21072906-001	W	87164	186502	08/03/2021 15:14	08/03/2021 17:20
	87164-1-BKS	BKS	87164-1-BKS	W	87164	186502	08/03/2021 15:14	08/03/2021 17:16
	87164-1-BLK	BLK	87164-1-BLK	W	87164	186502	08/03/2021 15:14	08/03/2021 17:11
	Effluent VSP-4 S	MS	21072906-001 S	W	87164	186502	08/03/2021 15:14	08/03/2021 17:25
	Effluent VSP-4 SD	MSD	21072906-001 S	W	87164	186502	08/03/2021 15:14	08/03/2021 17:30
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21072906-001	W	87144	186504	08/02/2021 15:17	08/03/2021 18:23
	87144-1-BKS	BKS	87144-1-BKS	W	87144	186504	08/02/2021 15:17	08/03/2021 18:18
	87144-1-BLK	BLK	87144-1-BLK	W	87144	186504	08/02/2021 15:17	08/03/2021 18:13
	Effluent VSP-4 S	MS	21072906-001 S	W	87144	186504	08/02/2021 15:17	08/03/2021 18:28
	Effluent VSP-4 SD	MSD	21072906-001 S	W	87144	186504	08/02/2021 15:17	08/03/2021 18:32
EPA 624 .1	Effluent VSP-4	Initial	21072906-001	W	87121	186394	07/29/2021 09:01	07/29/2021 18:40
	87121-1-BKS	BKS	87121-1-BKS	W	87121	186394	07/29/2021 09:01	07/29/2021 09:24
	87121-1-BLK	BLK	87121-1-BLK	W	87121	186394	07/29/2021 09:01	07/29/2021 10:39
	FLA Breakthrough JUL 2021 S	MS	21072717-001 S	W	87121	186394	07/29/2021 09:01	07/29/2021 14:31
	FLA Breakthrough JUL 2021 SD	MSD	21072717-001 S	W	87121	186394	07/29/2021 09:01	07/29/2021 14:54
SM 2340B	Effluent VSP-4	Initial	21072906-001	W	87164	186503	08/04/2021 12:24	08/03/2021 17:20
SM 2540D -2011	Effluent VSP-4	Initial	21072906-001	W	186422	186422	08/01/2021 13:45	08/01/2021 13:45
	186422-1-BKS	BKS	186422-1-BKS	W	186422	186422	08/01/2021 13:45	08/01/2021 13:45
	186422-1-BLK	BLK	186422-1-BLK	W	186422	186422	08/01/2021 13:45	08/01/2021 13:45
	21-659-207A-C D	MD	21072804-006 D	W	186422	186422	08/01/2021 13:45	08/01/2021 13:45
	MP401 D	MD	21072822-001 D	W	186422	186422	08/01/2021 13:45	08/01/2021 13:45
SM 5210B -2011	Effluent VSP-4	Initial	21072906-001	W	186701	186701	08/04/2021 17:30	08/04/2021 17:30

Analytical Method: SM 2540D -2011
Seq Number: 186422 Matrix: Water
MB Sample Id: 186422-1-BLK LCS Sample Id: 186422-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	99.60	99.90	100	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 186502 Matrix: Water Date Prep: 08/03/21
MB Sample Id: 87164-1-BLK LCS Sample Id: 87164-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	45.45	114	85-115	ug/L	
Lead	<1.000	40.00	42.81	107	85-115	ug/L	
Nickel	<1.000	40.00	44.70	112	85-115	ug/L	
Zinc	<20.00	200	214.4	107	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 186502 Matrix: Waste Water Date Prep: 08/03/21
Parent Sample Id: 21072906-001 MS Sample Id: 21072906-001 S MSD Sample Id: 21072906-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.729	40.00	45.54	107	45.73	108	70-130	1	25	ug/L	
Lead	<1.000	40.00	41.44	104	40.73	102	70-130	2	25	ug/L	
Nickel	13.92	40.00	55.81	105	56.32	106	70-130	1	25	ug/L	
Zinc	88.17	200	295.2	104	297.2	105	70-130	1	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 186504 Matrix: Water Date Prep: 08/02/21
MB Sample Id: 87144-1-BLK LCS Sample Id: 87144-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.69	99	85-115	ug/L	
Lead	<1.000	40.00	40.85	102	85-115	ug/L	
Nickel	<1.000	40.00	39.42	99	85-115	ug/L	
Zinc	<20.00	200	199.5	100	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21072906

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 186504 Matrix: Waste Water Date Prep: 08/02/21
Parent Sample Id: 21072906-001 MS Sample Id: 21072906-001 S MSD Sample Id: 21072906-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.918	40.00	43.44	104	41.56	99	70-130	5	25	ug/L	
Lead	<1.000	40.00	38.87	97	38.75	97	70-130	0	25	ug/L	
Nickel	13.97	40.00	54.86	102	52.64	97	70-130	5	25	ug/L	
Zinc	84.68	200	297	106	284.2	100	70-130	6	25	ug/L	

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 186394 Matrix: Water Date Prep: 07/29/21
MB Sample Id: 87121-1-BLK LCS Sample Id: 87121-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	47.04	94	54-148	ug/L	
Chloromethane	<1.000	50.00	48.47	97	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	49.99	100	5-195	ug/L	
Bromomethane	<1.000	50.00	43.23	86	15-185	ug/L	
Chloroethane	<1.000	50.00	46.24	92	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.19	92	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.56	91	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.11	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	44.93	90	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	46.52	93	70-130	ug/L	
Chloroform	<1.000	50.00	45.82	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	46.85	94	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.20	94	70-130	ug/L	
Benzene	<1.000	50.00	48.08	96	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	47.29	95	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.77	92	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.98	94	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.29	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.82	90	25-175	ug/L	
Toluene	<1.000	50.00	49.46	99	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.26	91	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.12	94	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.25	97	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	46.63	93	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.31	95	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.97	100	60-140	ug/L	
Bromoform	<1.000	50.00	45.75	92	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	44.97	90	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.77	90	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.14	88	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	45.14	90	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	98		93		87-120	%
4-Bromofluorobenzene	101		96		85-147	%
Toluene-D8	103		104		88-110	%

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Project Name Kop-Flex
PSS Project No.: 21072906

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 186502 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 08/03/21 16:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.62	99	85-115	ug/L	
Lead	40.00	37.63	94	85-115	ug/L	
Nickel	40.00	39.03	98	85-115	ug/L	
Zinc	200	193.6	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 186502 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 08/03/21 17:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.61	99	85-115	ug/L	
Lead	40.00	36.47	91	85-115	ug/L	
Nickel	40.00	39.05	98	85-115	ug/L	
Zinc	200	195.4	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 186502 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/03/21 12:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.33	96	90-110	ug/L	
Lead	40.00	37.76	94	90-110	ug/L	
Nickel	40.00	37.73	94	90-110	ug/L	
Zinc	200	189.4	95	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 186504 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 08/03/21 17:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.61	99	85-115	ug/L	
Lead	40.00	36.47	91	85-115	ug/L	
Nickel	40.00	39.05	98	85-115	ug/L	
Zinc	200	195.4	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 186504 Matrix: Water

CCV Sample Id: CCV 6 Analyzed Date: 08/03/21 19:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.29	98	85-115	ug/L	
Lead	40.00	36.68	92	85-115	ug/L	
Nickel	40.00	38.15	95	85-115	ug/L	
Zinc	200	192.5	96	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 186504 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/03/21 12:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.33	96	90-110	ug/L	
Lead	40.00	37.76	94	90-110	ug/L	
Nickel	40.00	37.73	94	90-110	ug/L	
Zinc	200	189.4	95	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21072906

Analytical Method: EPA 624 .1
Seq Number: 186394 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 07/29/21 09:24

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.04704	94	54-148	mg/L	
Chloromethane	0.05000	0.04847	97	57-135	mg/L	
Vinyl Chloride	0.05000	0.04999	100	64-129	mg/L	
Bromomethane	0.05000	0.04323	86	67-132	mg/L	
Chloroethane	0.05000	0.04624	92	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.04619	92	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.04556	91	67-126	mg/L	
Methylene Chloride	0.05000	0.04811	96	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04493	90	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.04652	93	76-127	mg/L	
Chloroform	0.05000	0.04582	92	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.04685	94	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.04720	94	73-130	mg/L	
Benzene	0.05000	0.04808	96	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.04729	95	77-129	mg/L	
Trichloroethene	0.05000	0.04577	92	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.04698	94	74-129	mg/L	
Bromodichloromethane	0.05000	0.04829	97	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.04482	90	76-116	mg/L	
Toluene	0.05000	0.04946	99	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04526	91	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.04712	94	78-127	mg/L	
Tetrachloroethylene	0.05000	0.04825	97	78-128	mg/L	
Dibromochloromethane	0.05000	0.04663	93	70-132	mg/L	
Chlorobenzene	0.05000	0.04731	95	72-128	mg/L	
Ethylbenzene	0.05000	0.04997	100	69-131	mg/L	
Bromoform	0.05000	0.04575	92	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.04497	90	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.04477	90	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04414	88	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.04514	90	65-133	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	96	85-147	%	
Toluene-D8	104	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21072906

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21072906 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401915010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservatives Use Codes: 1 | 3 | 3

② Analysis/Method Required ③: VOCs (624) | Total metals + hardness (200.8) | Dissolved metals (200.8) | TSS | BOD

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD
1	Effluent VSP-4	7/29/21	1045	WW	7	G	X	X	X	X	X

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1)	7/29/21	1206	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 11.2°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 11.1-12.6°C

Shipping Carrier: Client

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals sample filtered in field

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21072906

Client Name WSP USA - Herndon
Disposal Date 09/02/2021

Received By Thomas Wingate
Date Received 07/29/2021 12:06:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	12.6
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 07/29/2021

PM Review and Approval: Amber J Confer Date: 07/29/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072907

August 12, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21072907**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21072907**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 2, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21072907

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 07/29/2021 at 12:06 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21072907-001	Effluent VSP-4	WASTE WATER	07/29/21 10:45
21072907-002	TB-072921	WATER	07/29/21 10:16
21072907-002	TB-072921	WATER	07/29/21 10:16

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072907

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/29/2021 10:45** **PSS Sample ID: 21072907-001**
Matrix: WASTE WATER **Date/Time Received: 07/29/2021 12:06**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**8.3**	ug/L	1.0		1	08/11/21	08/11/21 16:18	1014
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*101*	*%*	*80-120*		*1*	*08/11/21*	*08/11/21 16:18*	*1014*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072907

Sample ID: TB-072921 **Date/Time Sampled: 07/29/2021 10:16** **PSS Sample ID: 21072907-002**
Matrix: WATER **Date/Time Received: 07/29/2021 12:06**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 186394 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Chloromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Vinyl Chloride	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Bromomethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Chloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Methylene Chloride	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Chloroform	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Benzene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Trichloroethene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Toluene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Tetrachloroethylene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Chlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Ethylbenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
Bromoform	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/29/21	07/29/21 19:03	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*105*	*%*	*87-120*	*1*	*07/29/21*	*07/29/21 19:03*	*1011*
4-Bromofluorobenzene	*99*	*%*	*85-147*	*1*	*07/29/21*	*07/29/21 19:03*	*1011*
Toluene-D8	*102*	*%*	*88-110*	*1*	*07/29/21*	*07/29/21 19:03*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21072907

Sample ID: TB-072921 **Date/Time Sampled: 07/29/2021 10:16** **PSS Sample ID: 21072907-002**
Matrix: WATER **Date/Time Received: 07/29/2021 12:06**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	08/11/21	08/11/21 17:03	1014
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*98*	*%*	*80-120*		*1*	*08/11/21*	*08/11/21 17:03*	*1014*

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Project Name: Kop-Flex

PSS Project No.: 21072907

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 186394

Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.16 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21072907

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-072921	Initial	21072907-002	W	87121	186394	07/29/2021 09:01	07/29/2021 19:03
	87121-1-BKS	BKS	87121-1-BKS	W	87121	186394	07/29/2021 09:01	07/29/2021 09:24
	87121-1-BLK	BLK	87121-1-BLK	W	87121	186394	07/29/2021 09:01	07/29/2021 10:39
	FLA Breakthrough JUL 2021 S	MS	21072717-001 S	W	87121	186394	07/29/2021 09:01	07/29/2021 14:31
	FLA Breakthrough JUL 2021 SD	MSD	21072717-001 S	W	87121	186394	07/29/2021 09:01	07/29/2021 14:54
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21072907-001	W	87270	186724	08/11/2021 14:02	08/11/2021 16:18
	TB-072921	Initial	21072907-002	W	87270	186724	08/11/2021 14:02	08/11/2021 17:03
	87270-1-BKS	BKS	87270-1-BKS	W	87270	186724	08/11/2021 14:02	08/11/2021 14:28
	87270-1-BLK	BLK	87270-1-BLK	W	87270	186724	08/11/2021 14:02	08/11/2021 15:56
	87270-1-BSD	BSD	87270-1-BSD	W	87270	186724	08/11/2021 14:02	08/11/2021 14:50

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21072907

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 186394 Matrix: Water Date Prep: 07/29/21
MB Sample Id: 87121-1-BLK LCS Sample Id: 87121-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	47.04	94	54-148	ug/L	
Chloromethane	<1.000	50.00	48.47	97	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	49.99	100	5-195	ug/L	
Bromomethane	<1.000	50.00	43.23	86	15-185	ug/L	
Chloroethane	<1.000	50.00	46.24	92	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.19	92	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.56	91	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.11	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	44.93	90	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	46.52	93	70-130	ug/L	
Chloroform	<1.000	50.00	45.82	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	46.85	94	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.20	94	70-130	ug/L	
Benzene	<1.000	50.00	48.08	96	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	47.29	95	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.77	92	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.98	94	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.29	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.82	90	25-175	ug/L	
Toluene	<1.000	50.00	49.46	99	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.26	91	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.12	94	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.25	97	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	46.63	93	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.31	95	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.97	100	60-140	ug/L	
Bromoform	<1.000	50.00	45.75	92	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	44.97	90	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.77	90	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.14	88	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	45.14	90	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	98		93		87-120	%
4-Bromofluorobenzene	101		96		85-147	%
Toluene-D8	103		104		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 186724 Matrix: Water Date Prep: 08/11/21
MB Sample Id: 87270-1-BLK LCS Sample Id: 87270-1-BKS LCSD Sample Id: 87270-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	24.92	83	28.66	96	50-150	15	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	100		96		102		80-120	%

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Project Name Kop-Flex
PSS Project No.: 21072907

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21072907

Analytical Method: EPA 624 .1
Seq Number: 186394 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 07/29/21 09:24

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.04704	94	54-148	mg/L	
Chloromethane	0.05000	0.04847	97	57-135	mg/L	
Vinyl Chloride	0.05000	0.04999	100	64-129	mg/L	
Bromomethane	0.05000	0.04323	86	67-132	mg/L	
Chloroethane	0.05000	0.04624	92	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.04619	92	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.04556	91	67-126	mg/L	
Methylene Chloride	0.05000	0.04811	96	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04493	90	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.04652	93	76-127	mg/L	
Chloroform	0.05000	0.04582	92	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.04685	94	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.04720	94	73-130	mg/L	
Benzene	0.05000	0.04808	96	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.04729	95	77-129	mg/L	
Trichloroethene	0.05000	0.04577	92	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.04698	94	74-129	mg/L	
Bromodichloromethane	0.05000	0.04829	97	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.04482	90	76-116	mg/L	
Toluene	0.05000	0.04946	99	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04526	91	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.04712	94	78-127	mg/L	
Tetrachloroethylene	0.05000	0.04825	97	78-128	mg/L	
Dibromochloromethane	0.05000	0.04663	93	70-132	mg/L	
Chlorobenzene	0.05000	0.04731	95	72-128	mg/L	
Ethylbenzene	0.05000	0.04997	100	69-131	mg/L	
Bromoform	0.05000	0.04575	92	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.04497	90	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.04477	90	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04414	88	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.04514	90	65-133	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	96	85-147	%	
Toluene-D8	104	88-110	%	

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 186724 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 08/11/21 14:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	24.91	83	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21072907

Analytical Method: SW-846 8260 B-Modified

Seq Number: 178641 Matrix: Water

Parent Sample Id: ICV, 1,4-DIOXANE ICV Sample Id: ICV, 1,4-DIOXANE Analyzed Date: 10/12/20 10:50

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	20.00	30.36	152	70-130	ug/L	X

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	98	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21072907 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1										Analysis/ Method Required: 1,4-dioxane (8260B SIM)	VOCs (624)
1	Effluent VSP-4	7/29/21	1045	WW	3	G		X												
2	TB-072921	—	—	—	4	—		X	X											Trip blank

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	7/29/21	1206	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 11.2°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 10.6-11.1°C

Shipping Carrier: CMT

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21072907

Client Name WSP USA - Herndon
Disposal Date 09/02/2021

Received By Thomas Wingate
Date Received 07/29/2021 12:06:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	11.1
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 07/29/2021

PM Review and Approval: Amber Confer — Date: 07/29/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083111

September 15, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21083111**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21083111**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 5, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21083111

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/31/2021 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21083111-001	Effluent VSP-4	WASTE WATER	08/31/21 12:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083111

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/31/2021 12:00** **PSS Sample ID: 21083111-001**
Matrix: WASTE WATER **Date/Time Received: 08/31/2021 13:00**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**5.9**	ug/L	1.0		1	09/01/21	09/01/21 19:13	1064
Lead	ND	ug/L	1.0		1	09/01/21	09/01/21 19:13	1064
Nickel	**21.3**	ug/L	1.00		1	09/01/21	09/01/21 19:13	1064
Zinc	**34.9**	ug/L	20.0		1	09/01/21	09/02/21 14:14	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.0**	ug/L	1.0		1	09/01/21	09/02/21 13:25	1064
Lead	ND	ug/L	1.0		1	09/01/21	09/02/21 13:25	1064
Nickel	**17.5**	ug/L	1.00		1	09/01/21	09/02/21 13:25	1064
Zinc	**23.0**	ug/L	20.0		1	09/01/21	09/02/21 13:25	1064

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Chloromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Bromomethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Chloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Methylene Chloride	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Chloroform	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Benzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Trichloroethene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083111

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/31/2021 12:00** **PSS Sample ID: 21083111-001**
Matrix: WASTE WATER **Date/Time Received: 08/31/2021 13:00**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Toluene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Chlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Ethylbenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
Bromoform	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:35	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*105*	*%*	*87-120*	*1*	*09/01/21*	*09/01/21 15:35*	*1011*
4-Bromofluorobenzene	*99*	*%*	*85-147*	*1*	*09/01/21*	*09/01/21 15:35*	*1011*
Toluene-D8	*101*	*%*	*88-110*	*1*	*09/01/21*	*09/01/21 15:35*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**19**	mg/L	0.66		1	09/08/21	09/08/21 16:35	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	09/02/21	09/02/21 18:30	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083111

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/31/2021 12:00** **PSS Sample ID: 21083111-001**
Matrix: WASTE WATER **Date/Time Received: 08/31/2021 13:00**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 31-Aug-21 17:40

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		08/31/21	09/05/21 11:35	4005

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Project Name: Kop-Flex

PSS Project No.: 21083111

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21083111: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21083111

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21083111-001	W	87499	187266	09/01/2021 10:17	09/01/2021 19:13
	87499-1-BKS	BKS	87499-1-BKS	W	87499	187266	09/01/2021 10:17	09/01/2021 18:41
	87499-1-BLK	BLK	87499-1-BLK	W	87499	187266	09/01/2021 10:17	09/01/2021 18:36
	001 S	MS	21082709-001 S	W	87499	187266	09/01/2021 10:17	09/01/2021 18:50
	001 SD	MSD	21082709-001 S	W	87499	187266	09/01/2021 10:17	09/01/2021 18:54
	Effluent VSP-4	Reanalysis	21083111-001	W	87499	187281	09/01/2021 10:17	09/02/2021 14:14
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21083111-001	W	87507	187339	09/01/2021 16:03	09/02/2021 13:25
	87507-1-BKS	BKS	87507-1-BKS	W	87507	187339	09/01/2021 16:03	09/02/2021 13:20
	87507-1-BLK	BLK	87507-1-BLK	W	87507	187339	09/01/2021 16:03	09/02/2021 13:15
	Effluent VSP-4 S	MS	21083111-001 S	W	87507	187339	09/01/2021 16:03	09/02/2021 13:29
	Effluent VSP-4 SD	MSD	21083111-001 S	W	87507	187339	09/01/2021 16:03	09/02/2021 13:34
EPA 624 .1	Effluent VSP-4	Initial	21083111-001	W	87512	187260	09/01/2021 11:02	09/01/2021 15:35
	87512-1-BKS	BKS	87512-1-BKS	W	87512	187260	09/01/2021 11:02	09/01/2021 11:24
	87512-1-BLK	BLK	87512-1-BLK	W	87512	187260	09/01/2021 11:02	09/01/2021 13:12
	King St 082721 S	MS	21083007-001 S	W	87512	187260	09/01/2021 11:02	09/01/2021 16:21
	King St 082721 SD	MSD	21083007-001 S	W	87512	187260	09/01/2021 11:02	09/01/2021 16:44
SM 2340B	87526-1-BKS	BKS	87526-1-BKS	W	87526	187345	09/02/2021 15:25	09/02/2021 17:42
	87526-1-BLK	BLK	87526-1-BLK	W	87526	187345	09/02/2021 15:25	09/02/2021 17:37
	001 S	MS	21090103-001 S	W	87526	187345	09/02/2021 15:25	09/02/2021 17:51
	001 SD	MSD	21090103-001 S	W	87526	187345	09/02/2021 15:25	09/02/2021 17:56
	Effluent VSP-4	Initial	21083111-001	W	87526	187420	09/09/2021 11:52	09/08/2021 16:35
SM 2540D -2011	Effluent VSP-4	Initial	21083111-001	W	187323	187323	09/02/2021 18:30	09/02/2021 18:30
	187323-1-BKS	BKS	187323-1-BKS	W	187323	187323	09/02/2021 18:30	09/02/2021 18:30
	187323-1-BLK	BLK	187323-1-BLK	W	187323	187323	09/02/2021 18:30	09/02/2021 18:30
	001 D	MD	21083006-001 D	W	187323	187323	09/02/2021 18:30	09/02/2021 18:30
	801 Monthly D	MD	21090208-001 D	W	187323	187323	09/02/2021 18:30	09/02/2021 18:30
SM 5210B -2011	Effluent VSP-4	Initial	21083111-001	W	187530	187530	08/31/2021 17:40	09/05/2021 11:35

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21083111

Analytical Method: SM 2540D -2011
Seq Number: 187323 Matrix: Water
MB Sample Id: 187323-1-BLK LCS Sample Id: 187323-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	101.6	101.2	100	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 187266 Matrix: Water Date Prep: 09/01/21
MB Sample Id: 87499-1-BLK LCS Sample Id: 87499-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	42.91	107	85-115	ug/L	
Lead	<1.000	40.00	35.13	88	85-115	ug/L	
Nickel	<1.000	40.00	41.74	104	85-115	ug/L	
Zinc	<20.00	200	218.6	109	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 187339 Matrix: Water Date Prep: 09/01/21
MB Sample Id: 87507-1-BLK LCS Sample Id: 87507-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.74	104	85-115	ug/L	
Lead	<1.000	40.00	41.68	104	85-115	ug/L	
Nickel	<1.000	40.00	40.87	102	85-115	ug/L	
Zinc	<20.00	200	198.8	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 187339 Matrix: Waste Water Date Prep: 09/01/21
Parent Sample Id: 21083111-001 MS Sample Id: 21083111-001 S MSD Sample Id: 21083111-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.984	40.00	39.95	92	39.53	91	70-130	1	25	ug/L	
Lead	<1.000	40.00	58.64	147	57.94	145	70-130	1	25	ug/L	X
Nickel	17.49	40.00	53.76	91	53.60	90	70-130	1	25	ug/L	
Zinc	23.03	200	208.6	93	206.7	92	70-130	1	25	ug/L	

Analytical Method: SM 2340B Prep Method: E200.8_PREP
Seq Number: 187345 Matrix: Water Date Prep: 09/02/21
MB Sample Id: 87526-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Hardness (Ca & Mg)	ND	0.7000	0.7000	mg/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21083111

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 187260
Matrix: Water
Date Prep: 09/01/21
MB Sample Id: 87512-1-BLK
LCS Sample Id: 87512-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.93	92	54-148	ug/L	
Chloromethane	<1.000	50.00	40.23	80	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.53	79	5-195	ug/L	
Bromomethane	<1.000	50.00	41.77	84	15-185	ug/L	
Chloroethane	<1.000	50.00	42.06	84	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.26	95	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.79	90	50-150	ug/L	
Methylene Chloride	<1.000	50.00	44.21	88	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	44.39	89	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.46	87	70-130	ug/L	
Chloroform	<1.000	50.00	47.29	95	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.71	95	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.68	101	70-130	ug/L	
Benzene	<1.000	50.00	47.19	94	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.94	92	70-130	ug/L	
Trichloroethene	<1.000	50.00	47.80	96	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.09	92	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.94	98	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	45.08	90	25-175	ug/L	
Toluene	<1.000	50.00	46.26	93	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	44.85	90	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.08	94	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	47.18	94	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	52.82	106	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.40	95	65-135	ug/L	
Ethylbenzene	<1.000	50.00	48.64	97	60-140	ug/L	
Bromoform	<1.000	50.00	50.61	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.85	96	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	47.40	95	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.35	93	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.97	96	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		99		87-120	%
4-Bromofluorobenzene	98		94		85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 187266 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 09/01/21 18:27

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	44.59	111	85-115	ug/L	
Lead	40.00	37.23	93	85-115	ug/L	
Nickel	40.00	44.25	111	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187266 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 09/01/21 19:27

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	44.48	111	85-115	ug/L	
Lead	40.00	34.28	86	85-115	ug/L	
Nickel	40.00	44.43	111	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187281 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 09/02/21 14:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Zinc	200	209.6	105	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187281 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 09/02/21 14:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Zinc	200	215.1	108	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187266 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 09/01/21 15:54

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	43.77	109	90-110	ug/L	
Lead	40.00	41.14	103	90-110	ug/L	
Nickel	40.00	42.77	107	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 187281 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 09/02/21 12:47

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Zinc	200	214.4	107	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 187339 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 09/02/21 14:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	43.49	109	85-115	ug/L	
Lead	40.00	42.51	106	85-115	ug/L	
Nickel	40.00	42.58	106	85-115	ug/L	
Zinc	200	209.6	105	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 187339 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 09/02/21 12:47

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	43.92	110	90-110	ug/L	
Lead	40.00	42.85	107	90-110	ug/L	
Nickel	40.00	43.02	108	90-110	ug/L	
Zinc	200	214.4	107	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21083111

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21083111 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1	3	3									
							Analysis/ Method Required		VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD							
1	Effluent VSP-4	8/31/21	1200	WW	7	G			X	X	X	X	X							

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	8/31/21	1300	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 8.5°c

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 9.1-9.8°c

Shipping Carrier: Client

Special Instructions:
Standard 10-day TAT
Metals = Cu, Ni, Pb, Zn
Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21083111

Client Name WSP USA - Herndon
Disposal Date 10/05/2021

Received By Thomas Wingate
Date Received 08/31/2021 01:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	9.8
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 08/31/2021

PM Review and Approval: Amber Confer — Date: 08/31/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083112

September 15, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21083112**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21083112**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 5, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21083112

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/31/2021 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21083112-001	Effluent VSP-4	WASTE WATER	08/31/21 12:00
21083112-002	TB-083121	WATER	08/31/21 11:35

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083112

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/31/2021 12:00** **PSS Sample ID: 21083112-001**
Matrix: WASTE WATER **Date/Time Received: 08/31/2021 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	09/11/21	09/11/21 13:23	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*97*	*%*	*80-120*		*1*	*09/11/21*	*09/11/21 13:23*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083112

Sample ID: TB-083121 **Date/Time Sampled: 08/31/2021 11:35** **PSS Sample ID: 21083112-002**
Matrix: WATER **Date/Time Received: 08/31/2021 13:00**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Chloromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Bromomethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Chloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Methylene Chloride	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Chloroform	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Benzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Trichloroethene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Toluene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Chlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Ethylbenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
Bromoform	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/01/21	09/01/21 15:13	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*104*	*%*	*87-120*	*1*	*09/01/21*	*09/01/21 15:13*	*1011*
4-Bromofluorobenzene	*97*	*%*	*85-147*	*1*	*09/01/21*	*09/01/21 15:13*	*1011*
Toluene-D8	*101*	*%*	*88-110*	*1*	*09/01/21*	*09/01/21 15:13*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21083112

Sample ID: TB-083121 **Date/Time Sampled: 08/31/2021 11:35** **PSS Sample ID: 21083112-002**
Matrix: WATER **Date/Time Received: 08/31/2021 13:00**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	09/11/21	09/11/21 13:46	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*98*	*%*	*80-120*		*1*	*09/11/21*	*09/11/21 13:46*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21083112

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21083112

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-083121	Initial	21083112-002	W	87512	187260	09/01/2021 11:02	09/01/2021 15:13
	87512-1-BKS	BKS	87512-1-BKS	W	87512	187260	09/01/2021 11:02	09/01/2021 11:24
	87512-1-BLK	BLK	87512-1-BLK	W	87512	187260	09/01/2021 11:02	09/01/2021 13:12
	King St 082721 S	MS	21083007-001 S	W	87512	187260	09/01/2021 11:02	09/01/2021 16:21
	King St 082721 SD	MSD	21083007-001 S	W	87512	187260	09/01/2021 11:02	09/01/2021 16:44
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21083112-001	W	87643	187508	09/11/2021 07:29	09/11/2021 13:23
	TB-083121	Initial	21083112-002	W	87643	187508	09/11/2021 07:29	09/11/2021 13:46
	87643-1-BKS	BKS	87643-1-BKS	W	87643	187508	09/11/2021 07:29	09/11/2021 11:55
	87643-1-BLK	BLK	87643-1-BLK	W	87643	187508	09/11/2021 07:29	09/11/2021 13:01
	87643-1-BSD	BSD	87643-1-BSD	W	87643	187508	09/11/2021 07:29	09/11/2021 12:17

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21083112

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 187260 Matrix: Water Date Prep: 09/01/21
MB Sample Id: 87512-1-BLK LCS Sample Id: 87512-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.93	92	54-148	ug/L	
Chloromethane	<1.000	50.00	40.23	80	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.53	79	5-195	ug/L	
Bromomethane	<1.000	50.00	41.77	84	15-185	ug/L	
Chloroethane	<1.000	50.00	42.06	84	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.26	95	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.79	90	50-150	ug/L	
Methylene Chloride	<1.000	50.00	44.21	88	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	44.39	89	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.46	87	70-130	ug/L	
Chloroform	<1.000	50.00	47.29	95	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.71	95	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.68	101	70-130	ug/L	
Benzene	<1.000	50.00	47.19	94	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.94	92	70-130	ug/L	
Trichloroethene	<1.000	50.00	47.80	96	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.09	92	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.94	98	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	45.08	90	25-175	ug/L	
Toluene	<1.000	50.00	46.26	93	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	44.85	90	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.08	94	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	47.18	94	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	52.82	106	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.40	95	65-135	ug/L	
Ethylbenzene	<1.000	50.00	48.64	97	60-140	ug/L	
Bromoform	<1.000	50.00	50.61	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.85	96	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	47.40	95	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.35	93	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.97	96	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		99		87-120	%
4-Bromofluorobenzene	98		94		85-147	%
Toluene-D8	100		100		88-110	%

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 187508 Matrix: Water Date Prep: 09/11/21
MB Sample Id: 87643-1-BLK LCS Sample Id: 87643-1-BKS LCSD Sample Id: 87643-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	26.96	90	27.98	93	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	96		97		100		80-120	%

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Project Name Kop-Flex
PSS Project No.: 21083112

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 187508 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 09/11/21 11:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.72	92	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21083112

Analytical Method: SW-846 8260 B-Modified

Seq Number: 187508 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 09/11/21 11:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.28	94	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21083112 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ④

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		Analysis/ Method Required ③ 1,4-dioxane (8260B SIM)	VOCs (624)
							1	1		
1	Effluent VSP-4	8/31/21	1200	WW	3	G			X	
2	TB-083121	—	—	—	4	—			X	X

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	8/31/21	1300	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER _____

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 8-5°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 11.1°-11.6°2

Shipping Carrier: Courier

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21083112

Client Name WSP USA - Herndon
Disposal Date 10/05/2021

Received By Thomas Wingate
Date Received 08/31/2021 01:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	11.8
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 08/31/2021

PM Review and Approval: Amber Confer — Date: 08/31/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092117

October 5, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21092117**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21092117**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 26, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21092117

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/21/2021 at 01:03 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21092117-001	Effluent VSP-4	WASTE WATER	09/21/21 11:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092117

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/21/2021 11:10** **PSS Sample ID: 21092117-001**
Matrix: WASTE WATER **Date/Time Received: 09/21/2021 13:03**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.2**	ug/L	1.0		1	09/24/21	09/26/21 17:42	1064
Lead	ND	ug/L	1.0		1	09/24/21	09/26/21 17:42	1064
Nickel	**14.2**	ug/L	1.00		1	09/24/21	09/26/21 17:42	1064
Zinc	**31.4**	ug/L	20.0		1	09/24/21	09/26/21 17:42	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.7**	ug/L	1.0		1	09/24/21	09/26/21 18:55	1064
Lead	ND	ug/L	1.0		1	09/24/21	09/26/21 18:55	1064
Nickel	**13.4**	ug/L	1.00		1	09/24/21	09/26/21 18:55	1064
Zinc	**30.5**	ug/L	20.0		1	09/24/21	09/26/21 18:55	1064

Volatile Organics Compounds (TVO) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Chloromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Bromomethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Chloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Methylene Chloride	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Chloroform	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Benzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Trichloroethene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092117

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/21/2021 11:10** **PSS Sample ID: 21092117-001**
Matrix: WASTE WATER **Date/Time Received: 09/21/2021 13:03**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Toluene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Chlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Ethylbenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
Bromoform	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:11	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*105*	*%*	*87-120*		*1*	*09/24/21*	*09/24/21 15:11*	*1011*
4-Bromofluorobenzene	*91*	*%*	*85-147*		*1*	*09/24/21*	*09/24/21 15:11*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*09/24/21*	*09/24/21 15:11*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**25**	mg/L	0.66		1	09/26/21	09/26/21 17:42	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	**1.8**	mg/L	1.0		1	09/22/21	09/22/21 15:00	1034

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092117

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/21/2021 11:10** **PSS Sample ID: 21092117-001**
Matrix: WASTE WATER **Date/Time Received: 09/21/2021 13:03**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 21-Sep-21 17:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		09/21/21	09/26/21 15:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21092117

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

21092117: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21092117

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21092117-001	W	87807	187942	09/24/2021 09:53	09/26/2021 17:42
	87807-1-BKS	BKS	87807-1-BKS	W	87807	187942	09/24/2021 09:53	09/26/2021 17:38
	87807-1-BLK	BLK	87807-1-BLK	W	87807	187942	09/24/2021 09:53	09/26/2021 17:33
	Effluent VSP-4 S	MS	21092117-001 S	W	87807	187942	09/24/2021 09:53	09/26/2021 17:47
	Effluent VSP-4 SD	MSD	21092117-001 S	W	87807	187942	09/24/2021 09:53	09/26/2021 17:51
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21092117-001	W	87818	187944	09/24/2021 15:16	09/26/2021 18:55
	87818-1-BKS	BKS	87818-1-BKS	W	87818	187944	09/24/2021 15:16	09/26/2021 18:50
	87818-1-BLK	BLK	87818-1-BLK	W	87818	187944	09/24/2021 15:16	09/26/2021 18:46
	Effluent VSP-4 S	MS	21092117-001 S	W	87818	187944	09/24/2021 15:16	09/26/2021 18:59
	Effluent VSP-4 SD	MSD	21092117-001 S	W	87818	187944	09/24/2021 15:16	09/26/2021 19:04
EPA 624 .1	Effluent VSP-4	Initial	21092117-001	W	87829	187929	09/24/2021 12:19	09/24/2021 15:11
	87829-1-BKS	BKS	87829-1-BKS	W	87829	187929	09/24/2021 12:19	09/24/2021 12:47
	87829-1-BLK	BLK	87829-1-BLK	W	87829	187929	09/24/2021 12:19	09/24/2021 14:25
	Effluent VSP-4 S	MS	21092117-001 S	W	87829	187929	09/24/2021 12:19	09/24/2021 16:19
	Effluent VSP-4 SD	MSD	21092117-001 S	W	87829	187929	09/24/2021 12:19	09/24/2021 16:42
SM 2340B	Effluent VSP-4	Initial	21092117-001	W	87807	188179	10/05/2021 08:40	09/26/2021 17:42
SM 2540D -2011	Effluent VSP-4	Initial	21092117-001	W	187855	187855	09/22/2021 15:00	09/22/2021 15:00
	187855-1-BKS	BKS	187855-1-BKS	W	187855	187855	09/22/2021 15:00	09/22/2021 15:00
	187855-1-BLK	BLK	187855-1-BLK	W	187855	187855	09/22/2021 15:00	09/22/2021 15:00
	09-17-21 D	MD	21091733-001 D	W	187855	187855	09/22/2021 15:00	09/22/2021 15:00
	14340-MH-West 1-09/21 D	MD	21092113-001 D	W	187855	187855	09/22/2021 15:00	09/22/2021 15:00
SM 5210B -2011	Effluent VSP-4	Initial	21092117-001	W	188172	188172	09/21/2021 17:00	09/26/2021 15:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092117

Analytical Method: SM 2540D -2011
Seq Number: 187855 Matrix: Water
MB Sample Id: 187855-1-BLK LCS Sample Id: 187855-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	108.4	105.1	97	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 187942 Matrix: Water Date Prep: 09/24/21
MB Sample Id: 87807-1-BLK LCS Sample Id: 87807-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.48	99	85-115	ug/L	
Lead	<1.000	40.00	37.04	93	85-115	ug/L	
Nickel	<1.000	40.00	38.73	97	85-115	ug/L	
Zinc	<20.00	200	190.3	95	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 187942 Matrix: Waste Water Date Prep: 09/24/21
Parent Sample Id: 21092117-001 MS Sample Id: 21092117-001 S MSD Sample Id: 21092117-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	3.165	40.00	43.24	100	42.23	98	70-130	2	25	ug/L	
Lead	<1.000	40.00	37.85	95	37.55	94	70-130	1	25	ug/L	
Nickel	14.18	40.00	53.60	99	52.14	95	70-130	4	25	ug/L	
Zinc	31.38	200	225.6	97	220.9	95	70-130	2	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 187944 Matrix: Water Date Prep: 09/24/21
MB Sample Id: 87818-1-BLK LCS Sample Id: 87818-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.20	101	85-115	ug/L	
Lead	<1.000	40.00	39.17	98	85-115	ug/L	
Nickel	<1.000	40.00	39.63	99	85-115	ug/L	
Zinc	<20.00	200	200.6	100	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092117

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 187944 Matrix: Waste Water Date Prep: 09/24/21
Parent Sample Id: 21092117-001 MS Sample Id: 21092117-001 S MSD Sample Id: 21092117-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.740	40.00	39.98	93	42.04	98	70-130	5	25	ug/L	
Lead	<1.000	40.00	36.11	90	38.78	97	70-130	7	25	ug/L	
Nickel	13.39	40.00	49.48	90	51.37	95	70-130	5	25	ug/L	
Zinc	30.50	200	214.7	92	225.9	98	70-130	6	25	ug/L	

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 187929 Matrix: Water Date Prep: 09/24/21
MB Sample Id: 87829-1-BLK LCS Sample Id: 87829-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	40.28	81	54-148	ug/L	
Chloromethane	<1.000	50.00	33.43	67	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.59	79	5-195	ug/L	
Bromomethane	<1.000	50.00	39.16	78	15-185	ug/L	
Chloroethane	<1.000	50.00	41.79	84	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.02	96	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.20	92	50-150	ug/L	
Methylene Chloride	<1.000	50.00	46.48	93	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.96	92	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.16	86	70-130	ug/L	
Chloroform	<1.000	50.00	47.60	95	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.59	95	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	51.85	104	70-130	ug/L	
Benzene	<1.000	50.00	47.50	95	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.43	89	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.96	98	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.74	89	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.63	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.19	88	25-175	ug/L	
Toluene	<1.000	50.00	47.07	94	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	43.81	88	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.80	96	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	51.95	104	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	51.77	104	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.07	94	65-135	ug/L	
Ethylbenzene	<1.000	50.00	47.03	94	60-140	ug/L	
Bromoform	<1.000	50.00	51.74	103	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	42.60	85	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	45.63	91	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.24	88	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	45.89	92	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	105		103		87-120	%
4-Bromofluorobenzene	86		87		85-147	%
Toluene-D8	110		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092117

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 187929 Matrix: Waste Water Date Prep: 09/24/21
Parent Sample Id: 21092117-001 MS Sample Id: 21092117-001 S MSD Sample Id: 21092117-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	43.74	87	40.11	80	43-150	8	27	ug/L	
Chloromethane	<1.000	50.00	37.02	74	34.78	70	1-273	6	60	ug/L	
Vinyl Chloride	<1.000	50.00	43.31	87	39.83	80	1-251	8	66	ug/L	
Bromomethane	<1.000	50.00	46.83	94	43.12	86	1-242	9	61	ug/L	
Chloroethane	<1.000	50.00	47.11	94	44.30	89	14-230	5	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.90	106	49.19	98	17-181	8	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	51.59	103	48.26	97	1-234	6	32	ug/L	
Methylene Chloride	<1.000	50.00	50.55	101	47.94	96	1-221	5	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	51.26	103	48.72	97	54-156	6	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.60	95	45.11	90	59-155	5	40	ug/L	
Chloroform	<1.000	50.00	52.78	106	49.75	100	51-138	6	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.71	105	49.98	100	52-162	5	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	57.17	114	53.96	108	70-140	5	41	ug/L	
Benzene	<1.000	50.00	52.76	106	49.63	99	37-151	7	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.97	98	46.29	93	49-155	5	49	ug/L	
Trichloroethene	<1.000	50.00	53.86	108	50.88	102	70-157	6	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.40	99	46.78	94	1-210	5	55	ug/L	
Bromodichloromethane	<1.000	50.00	53.66	107	50.96	102	35-155	5	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.81	96	45.61	91	1-227	5	58	ug/L	
Toluene	<1.000	50.00	52.61	105	49.32	99	47-150	6	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	46.92	94	45.03	90	17-183	4	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.84	106	50.26	101	52-150	5	45	ug/L	
Tetrachloroethylene	<1.000	50.00	56.97	114	53.43	107	64-148	6	39	ug/L	
Dibromochloromethane	<1.000	50.00	57.54	115	55.47	111	53-149	4	50	ug/L	
Chlorobenzene	<1.000	50.00	52.42	105	49.91	100	37-160	5	53	ug/L	
Ethylbenzene	<1.000	50.00	52.12	104	49.21	98	37-162	6	63	ug/L	
Bromoform	<1.000	50.00	56.66	113	55.34	111	45-169	2	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.97	100	48.88	98	46-157	2	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.91	104	50.24	100	59-156	4	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.62	101	49.25	99	18-190	2	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.46	105	50.78	102	18-190	3	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	104		104		87-120	%
4-Bromofluorobenzene	90		90		85-147	%
Toluene-D8	100		98		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 187942 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 09/26/21 17:24

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	42.53	106	85-115	ug/L	
Lead	40.00	39.77	99	85-115	ug/L	
Nickel	40.00	41.92	105	85-115	ug/L	
Zinc	200	204.4	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187942 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 09/26/21 18:23

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.97	105	85-115	ug/L	
Lead	40.00	40.61	102	85-115	ug/L	
Nickel	40.00	41.15	103	85-115	ug/L	
Zinc	200	203	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187942 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 09/26/21 19:17

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.57	104	85-115	ug/L	
Lead	40.00	41.15	103	85-115	ug/L	
Nickel	40.00	40.95	102	85-115	ug/L	
Zinc	200	200.5	100	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 187942 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 09/26/21 15:07

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	41.03	103	90-110	ug/L	
Lead	40.00	41.35	103	90-110	ug/L	
Nickel	40.00	40.12	100	90-110	ug/L	
Zinc	200	201	101	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092117

Analytical Method: EPA 200.8 Dissolved
Seq Number: 187944 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 09/26/21 18:23

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.97	105	85-115	ug/L	
Lead	40.00	40.61	102	85-115	ug/L	
Nickel	40.00	41.15	103	85-115	ug/L	
Zinc	200	203	102	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 187944 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 09/26/21 19:17

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.57	104	85-115	ug/L	
Lead	40.00	41.15	103	85-115	ug/L	
Nickel	40.00	40.95	102	85-115	ug/L	
Zinc	200	200.5	100	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 187944 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 09/26/21 15:07

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	41.03	103	90-110	ug/L	
Lead	40.00	41.35	103	90-110	ug/L	
Nickel	40.00	40.12	100	90-110	ug/L	
Zinc	200	201	101	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092117

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21092117 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (624)	Dissolved metals (200.8)	Total metals (200.8) + Hardness (2340B)	TSS	BOD									
							Preservatives Use Codes		1	3	3									
1	Effluent VSP-4	9/21/21	1110	WW	7	G	X	X	X	X	X									

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
[signature]	9/21/21	1303	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: COOLERS INTACT

Coolers: 1 TB 2.1°C Temp: 2.0-4.2°C

Shipping Carrier: CLIENT

Special Instructions:

Standard 10-day TAT

Metals = Cu, Ni, Pb, Zn

Dissolved metals field-filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21092117

Client Name WSP USA - Herndon
Disposal Date 10/26/2021

Received By Thomas Wingate
Date Received 09/21/2021 01:03:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.2
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 09/21/2021

PM Review and Approval: Amber Confer Date: 09/21/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092118

October 5, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21092118**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21092118**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 26, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21092118

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/21/2021 at 01:03 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21092118-001	Effluent VSP-4	WASTE WATER	09/21/21 11:10
21092118-002	Influent VSP-1	GROUND WATER	09/21/21 11:25
21092118-003	TB-092121	WATER	09/21/21 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092118

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/21/2021 11:10** **PSS Sample ID: 21092118-001**
Matrix: WASTE WATER **Date/Time Received: 09/21/2021 13:03**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/04/21	10/04/21 13:16	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*10/04/21*	*10/04/21 13:16*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092118

Sample ID: Influent VSP-1 **Date/Time Sampled: 09/21/2021 11:25** **PSS Sample ID: 21092118-002**
Matrix: GROUND WATER **Date/Time Received: 09/21/2021 13:03**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**87**	ug/L	10		10	10/04/21	10/04/21 14:01	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*10*	*10/04/21*	*10/04/21 14:01*	*1011*

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 187849 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	09/22/21	09/22/21 11:51	1011
Benzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Bromochloromethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Bromoform	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Bromomethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	09/22/21	09/22/21 11:51	1011
Carbon Disulfide	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Carbon tetrachloride	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Chlorobenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Chloroethane	**2.9**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Chloroform	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Chloromethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Cyclohexane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,1-Dichloroethane	**35**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2-Dichloroethane	**1.2**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,1-Dichloroethene	**180**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092118

Sample ID: Influent VSP-1 **Date/Time Sampled: 09/21/2021 11:25** **PSS Sample ID: 21092118-002**
Matrix: GROUND WATER **Date/Time Received: 09/21/2021 13:03**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 187849 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Ethylbenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	09/22/21	09/22/21 11:51	1011
Isopropylbenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Methyl Acetate	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Methylcyclohexane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Methylene chloride	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	09/22/21	09/22/21 11:51	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Naphthalene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Styrene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Tetrachloroethene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Toluene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,1,1-Trichloroethane	**15**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Trichloroethene	**1.0**	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
Vinyl chloride	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011
m&p-Xylene	ND	ug/L	2.0		1	09/22/21	09/22/21 11:51	1011
o-Xylene	ND	ug/L	1.0		1	09/22/21	09/22/21 11:51	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*90*	*%*	*88-112*		*1*	*09/22/21*	*09/22/21 11:51*	*1011*
Dibromofluoromethane	*105*	*%*	*93-111*		*1*	*09/22/21*	*09/22/21 11:51*	*1011*
Toluene-D8	*99*	*%*	*94-107*		*1*	*09/22/21*	*09/22/21 11:51*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092118

Sample ID: TB-092121 **Date/Time Sampled: 09/21/2021 00:00** **PSS Sample ID: 21092118-003**
Matrix: WATER **Date/Time Received: 09/21/2021 13:03**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Chloromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Bromomethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Chloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Methylene Chloride	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Chloroform	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Benzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Trichloroethene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Toluene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Chlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Ethylbenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
Bromoform	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/24/21	09/24/21 15:34	1011

Surrogate(s)	***Recovery***		***Limits***				
Dibromofluoromethane	*105*	*%*	*87-120*		*1*	*09/24/21*	*09/24/21 15:34*	*1011*
4-Bromofluorobenzene	*90*	*%*	*85-147*		*1*	*09/24/21*	*09/24/21 15:34*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*09/24/21*	*09/24/21 15:34*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21092118

Sample ID: TB-092121 **Date/Time Sampled: 09/21/2021 00:00** **PSS Sample ID: 21092118-003**
Matrix: WATER **Date/Time Received: 09/21/2021 13:03**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/04/21	10/04/21 13:38	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*10/04/21*	*10/04/21 13:38*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21092118

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

TCL Volatile Organic Compounds

Batch: 187849

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits. Exceedances are identified in QC summary.

Matrix spike/matrix spike duplicate (MS/MSD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21092118

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-092121	Initial	21092118-003	W	87829	187929	09/24/2021 12:19	09/24/2021 15:34
	87829-1-BKS	BKS	87829-1-BKS	W	87829	187929	09/24/2021 12:19	09/24/2021 12:47
	87829-1-BLK	BLK	87829-1-BLK	W	87829	187929	09/24/2021 12:19	09/24/2021 14:25
	Effluent VSP-4 S	MS	21092117-001 S	W	87829	187929	09/24/2021 12:19	09/24/2021 16:19
	Effluent VSP-4 SD	MSD	21092117-001 S	W	87829	187929	09/24/2021 12:19	09/24/2021 16:42
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21092118-001	W	87934	188165	10/04/2021 09:26	10/04/2021 13:16
	Influent VSP-1	Initial	21092118-002	W	87934	188165	10/04/2021 09:26	10/04/2021 14:01
	TB-092121	Initial	21092118-003	W	87934	188165	10/04/2021 09:26	10/04/2021 13:38
	87934-1-BKS	BKS	87934-1-BKS	W	87934	188165	10/04/2021 09:26	10/04/2021 11:46
	87934-1-BLK	BLK	87934-1-BLK	W	87934	188165	10/04/2021 09:26	10/04/2021 12:54
	87934-1-BSD	BSD	87934-1-BSD	W	87934	188165	10/04/2021 09:26	10/04/2021 12:08
SW-846 8260 D	Influent VSP-1	Initial	21092118-002	W	87790	187849	09/22/2021 09:48	09/22/2021 11:51
	87790-1-BKS	BKS	87790-1-BKS	W	87790	187849	09/22/2021 09:48	09/22/2021 09:48
	87790-1-BLK	BLK	87790-1-BLK	W	87790	187849	09/22/2021 09:48	09/22/2021 11:28
	Influent VSP-1 S	MS	21092118-002 S	W	87790	187849	09/22/2021 09:48	09/22/2021 14:53
	Influent VSP-1 SD	MSD	21092118-002 S	W	87790	187849	09/22/2021 09:48	09/22/2021 15:16

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 187929
Matrix: Water
Date Prep: 09/24/21
MB Sample Id: 87829-1-BLK
LCS Sample Id: 87829-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	40.28	81	54-148	ug/L	
Chloromethane	<1.000	50.00	33.43	67	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.59	79	5-195	ug/L	
Bromomethane	<1.000	50.00	39.16	78	15-185	ug/L	
Chloroethane	<1.000	50.00	41.79	84	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.02	96	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.20	92	50-150	ug/L	
Methylene Chloride	<1.000	50.00	46.48	93	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.96	92	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.16	86	70-130	ug/L	
Chloroform	<1.000	50.00	47.60	95	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.59	95	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	51.85	104	70-130	ug/L	
Benzene	<1.000	50.00	47.50	95	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.43	89	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.96	98	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.74	89	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.63	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.19	88	25-175	ug/L	
Toluene	<1.000	50.00	47.07	94	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	43.81	88	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.80	96	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	51.95	104	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	51.77	104	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.07	94	65-135	ug/L	
Ethylbenzene	<1.000	50.00	47.03	94	60-140	ug/L	
Bromoform	<1.000	50.00	51.74	103	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	42.60	85	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	45.63	91	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.24	88	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	45.89	92	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	105		103		87-120	%
4-Bromofluorobenzene	86		87		85-147	%
Toluene-D8	110		100		88-110	%

Analytical Method: SW-846 8260 B-Modified
Prep Method: SW5030B
Seq Number: 188165
Matrix: Water
Date Prep: 10/04/21
MB Sample Id: 87934-1-BLK
LCS Sample Id: 87934-1-BKS
LCSD Sample Id: 87934-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	28.55	95	31.70	106	50-150	11	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		103		101		80-120	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 187849
Matrix: Water
Date Prep: 09/22/21
MB Sample Id: 87790-1-BLK
LCS Sample Id: 87790-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	48.12	96	26-128	ug/L	
Benzene	<1.000	50.00	48.29	97	82-115	ug/L	
Bromochloromethane	<1.000	50.00	53.21	106	91-115	ug/L	
Bromodichloromethane	<1.000	50.00	49.51	99	88-122	ug/L	
Bromoform	<1.000	50.00	52.72	105	79-122	ug/L	
Bromomethane	<1.000	50.00	43.93	88	50-143	ug/L	
2-Butanone (MEK)	<5.000	50.00	50.71	101	51-113	ug/L	
Carbon Disulfide	<1.000	50.00	41.55	83	71-132	ug/L	
Carbon tetrachloride	<1.000	50.00	52.12	104	85-125	ug/L	
Chlorobenzene	<1.000	50.00	47.45	95	80-116	ug/L	
Chloroethane	<1.000	50.00	43.42	87	58-115	ug/L	
Chloroform	<1.000	50.00	48.46	97	81-113	ug/L	
Chloromethane	<1.000	50.00	36.98	74	48-132	ug/L	
Cyclohexane	<1.000	50.00	43.39	87	81-125	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	40.43	81	63-122	ug/L	
Dibromochloromethane	<1.000	50.00	52.82	106	84-120	ug/L	
1,2-Dibromoethane	<1.000	50.00	48.39	97	82-122	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.17	94	79-122	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.80	94	79-122	ug/L	
Dichlorodifluoromethane	<1.000	50.00	43.94	88	73-126	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.12	92	79-119	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.87	88	70-121	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.49	91	78-118	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	47.10	94	76-116	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.54	93	71-124	ug/L	
1,2-Dichloropropane	<1.000	50.00	45.89	92	79-121	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	45.21	90	83-123	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	44.97	90	82-125	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	46.51	93	74-118	ug/L	
Ethylbenzene	<1.000	50.00	47.68	95	85-120	ug/L	
2-Hexanone (MBK)	<5.000	50.00	43.67	87	51-126	ug/L	
Isopropylbenzene	<1.000	50.00	44.97	90	84-125	ug/L	
Methyl Acetate	<1.000	50.00	48.45	97	75-114	ug/L	
Methylcyclohexane	<1.000	50.00	49.90	100	88-124	ug/L	
Methylene chloride	<1.000	50.00	46.09	92	70-117	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	42.91	86	63-112	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	44.45	89	70-127	ug/L	
Naphthalene	<1.000	50.00	48.21	96	71-138	ug/L	
Styrene	<1.000	50.00	48.35	97	78-121	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	44.44	89	70-118	ug/L	
Tetrachloroethene	<1.000	50.00	51.57	103	83-113	ug/L	
Toluene	<1.000	50.00	47.46	95	85-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	48.61	97	80-134	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	48.64	97	83-134	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.47	97	84-122	ug/L	
Trichloroethene	<1.000	50.00	49.31	99	82-117	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.72	97	82-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.73	99	71-123	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	49.38	99	72-126	ug/L	
Vinyl chloride	<1.000	50.00	42.21	84	75-113	ug/L	
m&p-Xylene	<2.000	100	95.01	95	87-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 187849
Matrix: Water
Date Prep: 09/22/21
MB Sample Id: 87790-1-BLK
LCS Sample Id: 87790-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	46.63	93	87-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	92		89		88-112	%
Dibromofluoromethane	105		102		93-111	%
Toluene-D8	99		99		94-107	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 187849 Matrix: Ground Water Date Prep: 09/22/21
Parent Sample Id: 21092118-002 MS Sample Id: 21092118-002 S MSD Sample Id: 21092118-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acetone	<5.000	50.00	31.16	62	30.43	61	28-76	2	25	ug/L	
Benzene	<1.000	50.00	52.18	104	50.63	101	83-121	3	25	ug/L	
Bromochloromethane	<1.000	50.00	57.51	115	56.46	113	85-125	2	25	ug/L	
Bromodichloromethane	<1.000	50.00	50.98	102	50.24	100	85-129	2	25	ug/L	
Bromoform	<1.000	50.00	54.13	108	52.63	105	76-122	3	25	ug/L	
Bromomethane	<1.000	50.00	45.99	92	44.65	89	38-160	3	25	ug/L	
2-Butanone (MEK)	<5.000	50.00	46.81	94	48.35	97	53-93	3	25	ug/L	X
Carbon Disulfide	<1.000	50.00	45.06	90	43.86	88	75-135	2	25	ug/L	
Carbon tetrachloride	<1.000	50.00	54.36	109	53.01	106	89-130	3	25	ug/L	
Chlorobenzene	<1.000	50.00	51.66	103	49.73	99	81-122	4	25	ug/L	
Chloroethane	2.940	50.00	50.55	95	49.13	92	62-120	3	25	ug/L	
Chloroform	<1.000	50.00	50.78	102	49.47	99	82-120	3	25	ug/L	
Chloromethane	<1.000	50.00	38.10	76	37.66	75	55-134	1	25	ug/L	
Cyclohexane	<1.000	50.00	46.81	94	44.63	89	73-145	5	25	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	44.29	89	42.27	85	56-136	5	25	ug/L	
Dibromochloromethane	<1.000	50.00	55.16	110	53.97	108	82-120	2	25	ug/L	
1,2-Dibromoethane	<1.000	50.00	51.73	103	50.17	100	81-122	3	25	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.13	104	49.69	99	77-128	5	25	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.14	104	48.80	98	77-126	6	25	ug/L	
Dichlorodifluoromethane	<1.000	50.00	45.25	91	43.03	86	78-130	6	25	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.53	101	47.93	96	77-122	5	25	ug/L	
1,1-Dichloroethane	34.62	50.00	81.49	94	78.93	89	74-127	5	25	ug/L	
1,2-Dichloroethane	1.160	50.00	47.22	92	45.71	89	78-121	3	25	ug/L	
cis-1,2-Dichloroethene	1.070	50.00	54.63	107	53.30	104	81-121	3	25	ug/L	
1,1-Dichloroethene	184	50.00	240.2	112	233	98	76-130	13	25	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.04	98	47.92	96	80-125	2	25	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.29	95	46.66	93	78-126	2	25	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	45.77	92	45.29	91	76-127	1	25	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	50.84	102	49.30	99	75-124	3	25	ug/L	
Ethylbenzene	<1.000	50.00	51.91	104	49.17	98	88-127	6	25	ug/L	
2-Hexanone (MBK)	<5.000	50.00	43.23	86	41.87	84	43-123	2	25	ug/L	
Isopropylbenzene	<1.000	50.00	51.21	102	48.24	96	84-135	6	25	ug/L	
Methyl Acetate	<1.000	50.00	52.10	104	50.66	101	72-119	3	25	ug/L	
Methylcyclohexane	<1.000	50.00	53.59	107	51.51	103	87-129	4	25	ug/L	
Methylene chloride	<1.000	50.00	49.82	100	48.26	97	74-121	3	25	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	46.90	94	45.64	91	61-122	3	25	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	48.17	96	47.53	95	66-129	1	25	ug/L	
Naphthalene	<1.000	50.00	55.63	111	53.11	106	56-157	5	25	ug/L	
Styrene	<1.000	50.00	52.16	104	50.15	100	79-123	4	25	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.26	101	47.72	95	70-124	6	25	ug/L	
Tetrachloroethene	<1.000	50.00	57.14	114	55.43	111	74-132	3	25	ug/L	
Toluene	<1.000	50.00	52.05	104	50.56	101	72-141	3	25	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	53.28	107	51.17	102	71-139	5	25	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	53.90	108	51.43	103	72-141	5	25	ug/L	
1,1,1-Trichloroethane	14.90	50.00	67.34	105	65.77	102	84-129	3	25	ug/L	
Trichloroethene	1.040	50.00	55.01	108	52.88	104	81-123	4	25	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	51.35	103	50.60	101	81-118	2	25	ug/L	
Trichlorofluoromethane	<1.000	50.00	51.63	103	49.63	99	74-127	4	25	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	53.20	106	51.07	102	74-128	4	25	ug/L	
Vinyl chloride	<1.000	50.00	43.85	88	42.25	85	71-126	3	25	ug/L	
m&p-Xylene	<2.000	100	103.2	103	98.46	98	88-128	5	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: SW-846 8260 D

Prep Method: SW5030B
Seq Number: 187849
Matrix: Ground Water
Date Prep: 09/22/21
Parent Sample Id: 21092118-002
MS Sample Id: 21092118-002 S
MSD Sample Id: 21092118-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
o-Xylene	<1.000	50.00	50.62	101	48.23	96	89-128	5	25	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	90		89		88-112	%
Dibromofluoromethane	101		102		93-111	%
Toluene-D8	99		100		94-107	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 187508 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 09/11/21 11:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.72	92	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 188165 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/04/21 10:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.48	92	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	104	80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 187508 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 09/11/21 11:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.28	94	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 187849 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 09/22/21 09:48

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	48.12	96	80-120	ug/L	
Benzene	50.00	48.29	97	80-120	ug/L	
Bromochloromethane	50.00	53.21	106	80-120	ug/L	
Bromodichloromethane	50.00	49.51	99	80-120	ug/L	
Bromoform	50.00	52.72	105	80-120	ug/L	
Bromomethane	50.00	43.93	88	80-120	ug/L	
2-Butanone (MEK)	50.00	50.71	101	80-120	ug/L	
Carbon Disulfide	50.00	41.55	83	80-120	ug/L	
Carbon tetrachloride	50.00	52.12	104	80-120	ug/L	
Chlorobenzene	50.00	47.45	95	80-120	ug/L	
Chloroethane	50.00	43.42	87	80-120	ug/L	
Chloroform	50.00	48.46	97	80-120	ug/L	
Chloromethane	50.00	36.98	74	80-120	ug/L	X
Cyclohexane	50.00	43.39	87	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	40.43	81	80-120	ug/L	
Dibromochloromethane	50.00	52.82	106	80-120	ug/L	
1,2-Dibromoethane	50.00	48.39	97	80-120	ug/L	
1,2-Dichlorobenzene	50.00	47.17	94	80-120	ug/L	
1,3-Dichlorobenzene	50.00	46.80	94	80-120	ug/L	
Dichlorodifluoromethane	50.00	43.94	88	80-120	ug/L	
1,4-Dichlorobenzene	50.00	46.12	92	80-120	ug/L	
1,1-Dichloroethane	50.00	43.87	88	80-120	ug/L	
1,2-Dichloroethane	50.00	45.49	91	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	47.10	94	80-120	ug/L	
1,1-Dichloroethene	50.00	46.54	93	80-120	ug/L	
1,2-Dichloropropane	50.00	45.89	92	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	45.21	90	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	44.97	90	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	46.51	93	80-120	ug/L	
Ethylbenzene	50.00	47.68	95	80-120	ug/L	
2-Hexanone (MBK)	50.00	43.67	87	80-120	ug/L	
Isopropylbenzene	50.00	44.97	90	80-120	ug/L	
Methyl Acetate	50.00	48.45	97	80-120	ug/L	
Methylcyclohexane	50.00	49.90	100	80-120	ug/L	
Methylene chloride	50.00	46.09	92	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	42.91	86	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	44.45	89	80-120	ug/L	
Naphthalene	50.00	48.21	96	80-120	ug/L	
Styrene	50.00	48.35	97	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	44.44	89	80-120	ug/L	
Tetrachloroethene	50.00	51.57	103	80-120	ug/L	
Toluene	50.00	47.46	95	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	48.61	97	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	48.64	97	80-120	ug/L	
1,1,1-Trichloroethane	50.00	48.47	97	80-120	ug/L	
Trichloroethene	50.00	49.31	99	80-120	ug/L	
1,1,2-Trichloroethane	50.00	48.72	97	80-120	ug/L	
Trichlorofluoromethane	50.00	49.73	99	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	49.38	99	80-120	ug/L	
Vinyl chloride	50.00	42.21	84	80-120	ug/L	
m&p-Xylene	100	95.01	95	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: SW-846 8260 D

Seq Number: 187849 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 09/22/21 09:48

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	46.63	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	89	80-120	%	
Dibromofluoromethane	102	80-120	%	
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 186294 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	49.22	98	70-130	ug/L	
Benzene	50.00	54.27	109	70-130	ug/L	
Bromochloromethane	50.00	52.90	106	70-130	ug/L	
Bromodichloromethane	50.00	53.45	107	70-130	ug/L	
Bromoform	50.00	52.24	104	70-130	ug/L	
Bromomethane	50.00	53.06	106	70-130	ug/L	
2-Butanone (MEK)	50.00	53.45	107	70-130	ug/L	
Carbon Disulfide	50.00	51.00	102	70-130	ug/L	
Carbon tetrachloride	50.00	53.91	108	70-130	ug/L	
Chlorobenzene	50.00	54.58	109	70-130	ug/L	
Chloroethane	50.00	51.49	103	70-130	ug/L	
Chloroform	50.00	51.39	103	70-130	ug/L	
Chloromethane	50.00	56.63	113	70-130	ug/L	
Cyclohexane	50.00	53.81	108	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	53.11	106	70-130	ug/L	
Dibromochloromethane	50.00	54.38	109	70-130	ug/L	
1,2-Dibromoethane	50.00	54.46	109	70-130	ug/L	
1,2-Dichlorobenzene	50.00	54.18	108	70-130	ug/L	
1,3-Dichlorobenzene	50.00	53.86	108	70-130	ug/L	
Dichlorodifluoromethane	50.00	55.35	111	70-130	ug/L	
1,4-Dichlorobenzene	50.00	52.75	106	70-130	ug/L	
1,1-Dichloroethane	50.00	51.04	102	70-130	ug/L	
1,2-Dichloroethane	50.00	51.28	103	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	52.01	104	70-130	ug/L	
1,1-Dichloroethene	50.00	51.20	102	70-130	ug/L	
1,2-Dichloropropane	50.00	53.27	107	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	51.09	102	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	52.20	104	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	50.96	102	70-130	ug/L	
Ethylbenzene	50.00	56.70	113	70-130	ug/L	
2-Hexanone (MBK)	50.00	53.12	106	70-130	ug/L	
Isopropylbenzene	50.00	56.96	114	70-130	ug/L	
Methyl Acetate	50.00	53.55	107	70-130	ug/L	
Methylcyclohexane	50.00	58.66	117	70-130	ug/L	
Methylene chloride	50.00	54.15	108	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.30	107	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	51.91	104	70-130	ug/L	
Naphthalene	50.00	59.66	119	70-130	ug/L	
Styrene	50.00	58.65	117	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	53.36	107	70-130	ug/L	
Tetrachloroethene	50.00	56.17	112	70-130	ug/L	
Toluene	50.00	55.92	112	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	55.81	112	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	55.68	111	70-130	ug/L	
1,1,1-Trichloroethane	50.00	53.11	106	70-130	ug/L	
Trichloroethene	50.00	52.70	105	70-130	ug/L	
1,1,2-Trichloroethane	50.00	53.00	106	70-130	ug/L	
Trichlorofluoromethane	50.00	51.88	104	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	52.09	104	70-130	ug/L	
Vinyl chloride	50.00	54.00	108	70-130	ug/L	
m&p-Xylene	100	113	113	70-130	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21092118

Analytical Method: SW-846 8260 D

Seq Number: 186294 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	56.12	112	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	70-130	%	
Dibromofluoromethane	93	70-130	%	
Toluene-D8	102	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21092118 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010.04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - EB24KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1	1	1									
							Analysis/ Method Required ③	1,4-dioxane (8260B SIM)	VOCs (8260)	VOCs (624)										
1	Effluent VSP-4	9/21/21	1110	WW	3	G		X												
2	Influent VSP-1	9/21/21	1125	GW	6	G		X	X											
3	TB-092121	—	—	TB	4	—		X		X										

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	9/21/21	1303	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: COOLER INTACT

Coolers: 1 TB2.1 Temp: 2.0 - 4.2

Shipping Carrier: CLIENT

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21092118

Client Name WSP USA - Herndon
Disposal Date 10/26/2021

Received By Thomas Wingate
Date Received 09/21/2021 01:03:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.2
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 09/21/2021

PM Review and Approval: Amber Confer Date: 09/21/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100716

October 21, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21100716**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21100716**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 11, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21100716

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/07/2021 at 01:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21100716-001	Effluent VSP-4	WASTE WATER	10/07/21 12:25

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100716

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/07/2021 12:25** **PSS Sample ID: 21100716-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	10/11/21	10/11/21 15:52	1064
Lead	ND	ug/L	1.0		1	10/11/21	10/11/21 15:52	1064
Nickel	**3.4**	ug/L	1.0		1	10/11/21	10/11/21 15:52	1064
Zinc	**54.2**	ug/L	20.0		1	10/11/21	10/11/21 15:52	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	10/11/21	10/11/21 14:15	1034
Lead	ND	ug/L	1.0		1	10/11/21	10/11/21 14:15	1034
Nickel	**3.0**	ug/L	1.0		1	10/11/21	10/11/21 14:15	1034
Zinc	**41.6**	ug/L	20.0		1	10/11/21	10/11/21 14:15	1034

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	mg/L	0.0050		1	10/08/21	10/08/21 13:58	1011
Acrylonitrile	ND	mg/L	0.0050		1	10/08/21	10/08/21 13:58	1011
Dichlorodifluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Chloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Vinyl Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Bromomethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Chloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Trichlorofluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
2-Chloroethyl Vinyl Ether	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,1-Dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Methylene Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
trans-1,2-dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,1-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Chloroform	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,1,1-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Carbon Tetrachloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Benzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100716

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/07/2021 12:25** **PSS Sample ID: 21100716-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,2-Dichloropropane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Bromodichloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
cis-1,3-Dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Toluene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
trans-1,3-dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,1,2-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Tetrachloroethylene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Dibromochloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Chlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Ethylbenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
Bromoform	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,3-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,4-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011
1,2-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 13:58	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*107*	*%*	*87-120*		*10/08/21*	*10/08/21 13:58*	*1011*
4-Bromofluorobenzene	*87*	*%*	*85-147*		*10/08/21*	*10/08/21 13:58*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*10/08/21*	*10/08/21 13:58*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**24**	mg/L	0.66		1	10/11/21	10/11/21 15:52	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100716

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/07/2021 12:25** **PSS Sample ID: 21100716-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Total Suspended Solids — Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	10/07/21	10/07/21 14:30	1034

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 07-Oct-21 17:10

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		10/12/21	10/12/21 16:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21100716

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Preservative not indicated on COC for metals and VOC. Received containers preserved with HNO3 and a 624 kit with two unpreserved vials and one preserved with HCl.

21100716: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21100716

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21100716-001	W	88007	188366	10/11/2021 09:55	10/11/2021 15:52
	88007-1-BKS	BKS	88007-1-BKS	W	88007	188366	10/11/2021 09:55	10/11/2021 15:48
	88007-1-BLK	BLK	88007-1-BLK	W	88007	188366	10/11/2021 09:55	10/11/2021 15:43
	Effluent VSP-4 S	MS	21100716-001 S	W	88007	188366	10/11/2021 09:55	10/11/2021 15:57
	Effluent VSP-4 SD	MSD	21100716-001 S	W	88007	188366	10/11/2021 09:55	10/11/2021 16:02
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21100716-001	W	88006	188340	10/11/2021 09:53	10/11/2021 14:15
	88006-1-BKS	BKS	88006-1-BKS	W	88006	188340	10/11/2021 09:53	10/11/2021 14:10
	88006-1-BLK	BLK	88006-1-BLK	W	88006	188340	10/11/2021 09:53	10/11/2021 14:35
	Effluent VSP-4 S	MS	21100716-001 S	W	88006	188340	10/11/2021 09:53	10/11/2021 14:20
	Effluent VSP-4 SD	MSD	21100716-001 S	W	88006	188340	10/11/2021 09:53	10/11/2021 14:25
EPA 624 .1	Effluent VSP-4	Initial	21100716-001	W	88004	188319	10/08/2021 08:34	10/08/2021 13:58
	88004-1-BKS	BKS	88004-1-BKS	W	88004	188319	10/08/2021 08:34	10/08/2021 09:40
	88004-1-BLK	BLK	88004-1-BLK	W	88004	188319	10/08/2021 08:34	10/08/2021 11:19
	King St 100421 S	MS	21100603-001 S	W	88004	188319	10/08/2021 08:34	10/08/2021 14:43
	King St 100421 SD	MSD	21100603-001 S	W	88004	188319	10/08/2021 08:34	10/08/2021 15:06
SM 2340B	Effluent VSP-4	Initial	21100716-001	W	88007	188512	10/11/2021 09:55	10/11/2021 15:52
SM 2540D -2011	Effluent VSP-4	Initial	21100716-001	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
	188272-1-BKS	BKS	188272-1-BKS	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
	188272-1-BLK	BLK	188272-1-BLK	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
	801 Monthly D	MD	21100704-001 D	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
SM 5210B -2011	Effluent VSP-4	Initial	21100716-001	W	188598	188598	10/12/2021 16:00	10/12/2021 16:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100716

Analytical Method: SM 2540D -2011
Seq Number: 188272 Matrix: Water
MB Sample Id: 188272-1-BLK LCS Sample Id: 188272-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	110	105.6	96	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 188366 Matrix: Water Date Prep: 10/11/21
MB Sample Id: 88007-1-BLK LCS Sample Id: 88007-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	37.46	94	85-115	ug/L	
Lead	<1.000	40.00	38.53	96	85-115	ug/L	
Nickel	<1.000	40.00	36.76	92	85-115	ug/L	
Zinc	<20.00	200	183.8	92	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 188366 Matrix: Waste Water Date Prep: 10/11/21
Parent Sample Id: 21100716-001 MS Sample Id: 21100716-001 S MSD Sample Id: 21100716-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	37.86	95	38.11	95	70-130	0	25	ug/L	
Lead	<1.000	40.00	38.85	97	40.46	101	70-130	4	25	ug/L	
Nickel	3.366	40.00	40.42	93	40.78	94	70-130	1	25	ug/L	
Zinc	54.21	200	237.2	91	238	92	70-130	1	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 188340 Matrix: Water Date Prep: 10/11/21
MB Sample Id: 88006-1-BLK LCS Sample Id: 88006-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.00	103	85-115	ug/L	
Lead	<1.000	40.00	40.76	102	85-115	ug/L	
Nickel	<1.000	40.00	40.02	100	85-115	ug/L	
Zinc	<20.00	200	204.3	102	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100716

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 188340 Matrix: Waste Water Date Prep: 10/11/21
Parent Sample Id: 21100716-001 MS Sample Id: 21100716-001 S MSD Sample Id: 21100716-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	41.52	104	42.78	107	70-130	3	25	ug/L	
Lead	<1.000	40.00	39.54	99	41.26	103	70-130	4	25	ug/L	
Nickel	3.038	40.00	43.33	101	44.51	104	70-130	3	25	ug/L	
Zinc	41.63	200	244.1	101	249.3	104	70-130	3	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100716

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 188319
Matrix: Water
Date Prep: 10/08/21
MB Sample Id: 88004-1-BLK
LCS Sample Id: 88004-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	0.05000	0.04927	99	60-140	mg/L	
Acrylonitrile	<0.005000	0.05000	0.04480	90	60-140	mg/L	
Dichlorodifluoromethane	<0.001000	0.05000	0.03978	80	54-148	mg/L	
Chloromethane	<0.001000	0.05000	0.03400	68	1-205	mg/L	
Vinyl Chloride	<0.001000	0.05000	0.04017	80	5-195	mg/L	
Bromomethane	<0.001000	0.05000	0.04625	93	15-185	mg/L	
Chloroethane	<0.001000	0.05000	0.04513	90	40-160	mg/L	
Trichlorofluoromethane	<0.001000	0.05000	0.05400	108	50-150	mg/L	
2-Chloroethyl Vinyl Ether	<0.001000	0.05000	0.03649	73	1-225	mg/L	
1,1-Dichloroethene	<0.001000	0.05000	0.05259	105	50-150	mg/L	
Methylene Chloride	<0.001000	0.05000	0.05117	102	60-140	mg/L	
trans-1,2-dichloroethene	<0.001000	0.05000	0.05249	105	70-130	mg/L	
1,1-Dichloroethane	<0.001000	0.05000	0.04495	90	70-130	mg/L	
Chloroform	<0.001000	0.05000	0.05157	103	70-135	mg/L	
1,1,1-Trichloroethane	<0.001000	0.05000	0.05255	105	70-130	mg/L	
Carbon Tetrachloride	<0.001000	0.05000	0.05808	116	70-130	mg/L	
Benzene	<0.001000	0.05000	0.05123	102	65-135	mg/L	
1,2-Dichloroethane	<0.001000	0.05000	0.04612	92	70-130	mg/L	
Trichloroethene	<0.001000	0.05000	0.05450	109	65-135	mg/L	
1,2-Dichloropropane	<0.001000	0.05000	0.04643	93	35-165	mg/L	
Bromodichloromethane	<0.001000	0.05000	0.05335	107	65-135	mg/L	
cis-1,3-Dichloropropene	<0.001000	0.05000	0.04819	96	25-175	mg/L	
Toluene	<0.001000	0.05000	0.05254	105	70-130	mg/L	
trans-1,3-dichloropropene	<0.001000	0.05000	0.04819	96	50-150	mg/L	
1,1,2-Trichloroethane	<0.001000	0.05000	0.05299	106	70-130	mg/L	
Tetrachloroethylene	<0.001000	0.05000	0.06337	127	70-130	mg/L	
Dibromochloromethane	<0.001000	0.05000	0.05863	117	70-135	mg/L	
Chlorobenzene	<0.001000	0.05000	0.05125	103	65-135	mg/L	
Ethylbenzene	<0.001000	0.05000	0.04956	99	60-140	mg/L	
Bromoform	<0.001000	0.05000	0.06093	122	70-130	mg/L	
1,1,2,2-Tetrachloroethane	<0.001000	0.05000	0.04504	90	60-140	mg/L	
1,3-Dichlorobenzene	<0.001000	0.05000	0.05076	102	70-130	mg/L	
1,4-Dichlorobenzene	<0.001000	0.05000	0.04927	99	65-135	mg/L	
1,2-Dichlorobenzene	<0.001000	0.05000	0.05185	104	65-135	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		105		87-120	%
4-Bromofluorobenzene	85		82	*	85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 188366 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 10/11/21 15:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	37.61	94	85-115	ug/L	
Lead	40.00	39.85	100	85-115	ug/L	
Nickel	40.00	37.91	95	85-115	ug/L	
Zinc	200	193.9	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188366 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 10/11/21 16:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.37	96	85-115	ug/L	
Lead	40.00	38.98	97	85-115	ug/L	
Nickel	40.00	38.19	95	85-115	ug/L	
Zinc	200	194.4	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188366 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 10/11/21 17:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.02	95	85-115	ug/L	
Lead	40.00	43.02	108	85-115	ug/L	
Nickel	40.00	37.80	95	85-115	ug/L	
Zinc	200	193.5	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188366 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/11/21 12:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.46	96	90-110	ug/L	
Lead	40.00	39.54	99	90-110	ug/L	
Nickel	40.00	38.63	97	90-110	ug/L	
Zinc	200	202.9	101	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 188340 Matrix: Water

CCV Sample Id: CCV 1 Analyzed Date: 10/11/21 15:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	41.15	103	85-115	ug/L	
Lead	40.00	40.01	100	85-115	ug/L	
Nickel	40.00	40.05	100	85-115	ug/L	
Zinc	200	204.3	102	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 188340 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/11/21 12:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	41.76	104	90-110	ug/L	
Lead	40.00	41.74	104	90-110	ug/L	
Nickel	40.00	40.45	101	90-110	ug/L	
Zinc	200	205.2	103	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100716

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05190	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05150	103	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
2-Chloroethyl Vinyl ether	0.05000	0.04802	96	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21100716 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannan Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes / Analysis/Method Required: VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD							
1	Effluent VSP-4	10/7/21	1225	WW	7	G	X	X	X	X	X							

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannan Burke	10/7/21	1320	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: COOLERS INTACT

Coolers: 1 Temp: 3.5-4.1 °C

Shipping Carrier: CLIENT

Special Instructions: Standard 10-day TAT TEMP BLANK: 4.1°C

Metals = Cu, Pb, Ni, Zn

Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21100716

Client Name WSP USA - Herndon
Disposal Date 11/11/2021

Received By Brad Crozier
Date Received 10/07/2021 01:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Brad Crozier

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.1
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Preservative not indicated on COC for metals and VOC. Received containers preserved with HNO3 and a 624 kit with two unpreserved vials and one preserved with HCl.

Samples Inspected/Checklist Completed By: _____ Date: 10/07/2021
Brad Crozier

PM Review and Approval: _____ Date: 10/07/2021
Amber Hoefer

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100718

October 21, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21100718**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21100718**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 11, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21100718

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/07/2021 at 01:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21100718-001	Effluent VSP-4	WASTE WATER	10/07/21 12:25
21100718-002	TB-100721	WATER	10/07/21 13:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100718

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/07/2021 12:25** **PSS Sample ID: 21100718-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/20/21	10/20/21 13:45	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*10/20/21*	*10/20/21 13:45*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100718

Sample ID: TB-100721 **Date/Time Sampled: 10/07/2021 13:20** **PSS Sample ID: 21100718-002**
Matrix: WATER **Date/Time Received: 10/07/2021 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	mg/L	0.0050		1	10/08/21	10/08/21 14:20	1011
Dichlorodifluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Acrylonitrile	ND	mg/L	0.0050		1	10/08/21	10/08/21 14:20	1011
Chloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Vinyl Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Bromomethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Chloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Trichlorofluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
2-Chloroethyl Vinyl Ether	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,1-Dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Methylene Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
trans-1,2-dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,1-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Chloroform	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,1,1-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Carbon Tetrachloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Benzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Trichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,2-Dichloropropane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Bromodichloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
cis-1,3-Dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Toluene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
trans-1,3-dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,1,2-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Tetrachloroethylene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Dibromochloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Chlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Ethylbenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
Bromoform	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,3-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,4-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011
1,2-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 14:20	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100718

Sample ID: TB-100721 **Date/Time Sampled: 10/07/2021 13:20** **PSS Sample ID: 21100718-002**
Matrix: WATER **Date/Time Received: 10/07/2021 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*107*	*%*	*87-120*	*1*	*10/08/21*	*10/08/21 14:20*	*1011*
4-Bromofluorobenzene	*85*	*%*	*85-147*	*1*	*10/08/21*	*10/08/21 14:20*	*1011*
Toluene-D8	*100*	*%*	*88-110*	*1*	*10/08/21*	*10/08/21 14:20*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/20/21	10/20/21 15:14	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*99*	*%*	*80-120*	*1*	*10/20/21*	*10/20/21 15:14*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21100718

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21100718

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-100721	Initial	21100718-002	W	88004	188319	10/08/2021 08:34	10/08/2021 14:20
	88004-1-BKS	BKS	88004-1-BKS	W	88004	188319	10/08/2021 08:34	10/08/2021 09:40
	88004-1-BLK	BLK	88004-1-BLK	W	88004	188319	10/08/2021 08:34	10/08/2021 11:19
	King St 100421 S	MS	21100603-001 S	W	88004	188319	10/08/2021 08:34	10/08/2021 14:43
	King St 100421 SD	MSD	21100603-001 S	W	88004	188319	10/08/2021 08:34	10/08/2021 15:06
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21100718-001	W	88151	188602	10/20/2021 07:33	10/20/2021 13:45
	TB-100721	Initial	21100718-002	W	88151	188602	10/20/2021 07:33	10/20/2021 15:14
	88151-1-BKS	BKS	88151-1-BKS	W	88151	188602	10/20/2021 07:33	10/20/2021 12:17
	88151-1-BLK	BLK	88151-1-BLK	W	88151	188602	10/20/2021 07:33	10/20/2021 13:23
	88151-1-BSD	BSD	88151-1-BSD	W	88151	188602	10/20/2021 07:33	10/20/2021 12:39

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100718

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 188319
Matrix: Water
Date Prep: 10/08/21
MB Sample Id: 88004-1-BLK
LCS Sample Id: 88004-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	0.05000	0.04927	99	60-140	mg/L	
Acrylonitrile	<0.005000	0.05000	0.04480	90	60-140	mg/L	
Dichlorodifluoromethane	<0.001000	0.05000	0.03978	80	54-148	mg/L	
Chloromethane	<0.001000	0.05000	0.03400	68	1-205	mg/L	
Vinyl Chloride	<0.001000	0.05000	0.04017	80	5-195	mg/L	
Bromomethane	<0.001000	0.05000	0.04625	93	15-185	mg/L	
Chloroethane	<0.001000	0.05000	0.04513	90	40-160	mg/L	
Trichlorofluoromethane	<0.001000	0.05000	0.05400	108	50-150	mg/L	
2-Chloroethyl Vinyl Ether	<0.001000	0.05000	0.03649	73	1-225	mg/L	
1,1-Dichloroethene	<0.001000	0.05000	0.05259	105	50-150	mg/L	
Methylene Chloride	<0.001000	0.05000	0.05117	102	60-140	mg/L	
trans-1,2-dichloroethene	<0.001000	0.05000	0.05249	105	70-130	mg/L	
1,1-Dichloroethane	<0.001000	0.05000	0.04495	90	70-130	mg/L	
Chloroform	<0.001000	0.05000	0.05157	103	70-135	mg/L	
1,1,1-Trichloroethane	<0.001000	0.05000	0.05255	105	70-130	mg/L	
Carbon Tetrachloride	<0.001000	0.05000	0.05808	116	70-130	mg/L	
Benzene	<0.001000	0.05000	0.05123	102	65-135	mg/L	
1,2-Dichloroethane	<0.001000	0.05000	0.04612	92	70-130	mg/L	
Trichloroethene	<0.001000	0.05000	0.05450	109	65-135	mg/L	
1,2-Dichloropropane	<0.001000	0.05000	0.04643	93	35-165	mg/L	
Bromodichloromethane	<0.001000	0.05000	0.05335	107	65-135	mg/L	
cis-1,3-Dichloropropene	<0.001000	0.05000	0.04819	96	25-175	mg/L	
Toluene	<0.001000	0.05000	0.05254	105	70-130	mg/L	
trans-1,3-dichloropropene	<0.001000	0.05000	0.04819	96	50-150	mg/L	
1,1,2-Trichloroethane	<0.001000	0.05000	0.05299	106	70-130	mg/L	
Tetrachloroethylene	<0.001000	0.05000	0.06337	127	70-130	mg/L	
Dibromochloromethane	<0.001000	0.05000	0.05863	117	70-135	mg/L	
Chlorobenzene	<0.001000	0.05000	0.05125	103	65-135	mg/L	
Ethylbenzene	<0.001000	0.05000	0.04956	99	60-140	mg/L	
Bromoform	<0.001000	0.05000	0.06093	122	70-130	mg/L	
1,1,2,2-Tetrachloroethane	<0.001000	0.05000	0.04504	90	60-140	mg/L	
1,3-Dichlorobenzene	<0.001000	0.05000	0.05076	102	70-130	mg/L	
1,4-Dichlorobenzene	<0.001000	0.05000	0.04927	99	65-135	mg/L	
1,2-Dichlorobenzene	<0.001000	0.05000	0.05185	104	65-135	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		105		87-120	%
4-Bromofluorobenzene	85		82	*	85-147	%
Toluene-D8	100		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100718

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 188602 Matrix: Water Date Prep: 10/20/21
MB Sample Id: 88151-1-BLK LCS Sample Id: 88151-1-BKS LCSD Sample Id: 88151-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	26.79	89	26.49	88	50-150	1	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	98		100		101		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100718

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05190	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05150	103	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
2-Chloroethyl Vinyl ether	0.05000	0.04802	96	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100718

Analytical Method: SW-846 8260 B-Modified
Seq Number: 188602 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/20/21 11:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.76	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	98	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 188602 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/20/21 11:23

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.34	91	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2110071S | PAGE 1 OF 1

BILL TO (If different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: ericjohnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannan Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	Analysis/ Method Required: 1,4-dioxane (8260SIM)	VOCs (624)
1	Effluent VSP-4	10/7/21	1225	WW	3	G		X	
2	TB-100721	—	—	TB	4	—		X	X

⑤ ④

Relinquished By: (1)	Date: 10/7/21	Time: 1320	Received By:
Relinquished By: (2)	Date:	Time:	Received By:
Relinquished By: (3)	Date:	Time:	Received By:
Relinquished By: (4)	Date:	Time:	Received By:

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: ~~0~~ COOLER INTACT

Coolers: 1 Temp: 3.0 - 5.3 C

Shipping Carrier: CLIENT

Special Instructions:
Standard 10-day TAT
TEMP BLANK 4.1C

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation, including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21100718

Client Name WSP USA - Herndon
Disposal Date 11/11/2021

Received By Brad Crozier
Date Received 10/07/2021 01:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Brad Crozier

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	5.3
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Brad Crozier Date: 10/07/2021

PM Review and Approval: Amber Confer Date: 10/07/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110310

November 17, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21110310**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21110310**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 8, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21110310

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/03/2021 at 12:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21110310-001	Effluent VSP-4	WASTE WATER	11/03/21 10:40

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110310

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/03/2021 10:40** **PSS Sample ID: 21110310-001**
Matrix: WASTE WATER **Date/Time Received: 11/03/2021 12:15**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**7.3**	ug/L	1.0		1	11/04/21	11/04/21 13:20	1064
Lead	ND	ug/L	1.0		1	11/04/21	11/04/21 13:20	1064
Nickel	**995**	ug/L	20.0		20	11/04/21	11/05/21 00:07	1064
Zinc	**33.4**	ug/L	20.0		1	11/04/21	11/04/21 13:20	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.7**	ug/L	1.0		1	11/04/21	11/04/21 21:33	1064
Lead	ND	ug/L	1.0		1	11/04/21	11/04/21 21:33	1064
Nickel	**16.1**	ug/L	1.00		1	11/04/21	11/04/21 21:33	1064
Zinc	**28.2**	ug/L	20.0		1	11/04/21	11/04/21 21:33	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	11/03/21	11/03/21 17:51	1011
Acrylonitrile	ND	ug/L	5.0		1	11/03/21	11/03/21 17:51	1011
Benzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Bromoform	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Bromomethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Chlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Chloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Chloroform	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Chloromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110310

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/03/2021 10:40** **PSS Sample ID: 21110310-001**
Matrix: WASTE WATER **Date/Time Received: 11/03/2021 12:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,2-Dichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Ethylbenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Methylene Chloride	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Tetrachloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Toluene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Trichloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/03/21	11/03/21 17:51	1011

Surrogate(s)	***Recovery***		***Limits***				
Dibromofluoromethane	*101*	*%*	*87-120*		*1*	*11/03/21*	*11/03/21 17:51*	*1011*
4-Bromofluorobenzene	*97*	*%*	*85-147*		*1*	*11/03/21*	*11/03/21 17:51*	*1011*
Toluene-D8	*98*	*%*	*88-110*		*1*	*11/03/21*	*11/03/21 17:51*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**23**	mg/L	0.66		1	11/04/21	11/04/21 23:39	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110310

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/03/2021 10:40** **PSS Sample ID: 21110310-001**
Matrix: WASTE WATER **Date/Time Received: 11/03/2021 12:15**

Total Suspended Solids — Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	11/04/21	11/04/21 09:17	1034

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 03-Nov-21 15:40

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		11/08/21	11/08/21 16:00	4005

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Project Name: Kop-Flex

PSS Project No.: 21110310

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

21110310: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21110310

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21110310-001	W	88313	188985	11/04/2021 07:33	11/04/2021 13:20
	88313-1-BKS	BKS	88313-1-BKS	W	88313	188985	11/04/2021 07:33	11/04/2021 13:15
	88313-1-BLK	BLK	88313-1-BLK	W	88313	188985	11/04/2021 07:33	11/04/2021 13:10
	20211103HRP001 S	MS	21110309-001 S	W	88313	188985	11/04/2021 07:33	11/04/2021 13:01
	20211103HRP001 SD	MSD	21110309-001 S	W	88313	188985	11/04/2021 07:33	11/04/2021 13:06
	Effluent VSP-4	Reanalysis	21110310-001	W	88313	189019	11/04/2021 07:33	11/05/2021 00:07
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21110310-001	W	88312	189016	11/04/2021 07:33	11/04/2021 21:33
	88312-1-BKS	BKS	88312-1-BKS	W	88312	189016	11/04/2021 07:33	11/04/2021 21:10
	88312-1-BLK	BLK	88312-1-BLK	W	88312	189016	11/04/2021 07:33	11/04/2021 21:05
	20211101-001 S	MS	21110108-001 S	W	88312	189016	11/04/2021 07:33	11/04/2021 21:19
	20211101-001 SD	MSD	21110108-001 S	W	88312	189016	11/04/2021 07:33	11/04/2021 21:24
EPA 624 .1	Effluent VSP-4	Initial	21110310-001	W	88318	188958	11/03/2021 15:00	11/03/2021 17:51
	88318-1-BKS	BKS	88318-1-BKS	W	88318	188958	11/03/2021 09:52	11/03/2021 10:57
	88318-1-BLK	BLK	88318-1-BLK	W	88318	188958	11/03/2021 09:52	11/03/2021 13:59
	Effluent VSP-4 S	MS	21110310-001 S	W	88318	188958	11/03/2021 15:00	11/03/2021 18:59
	Effluent VSP-4 SD	MSD	21110310-001 S	W	88318	188958	11/03/2021 15:00	11/03/2021 19:22
SM 2340B	Effluent VSP-4	Initial	21110310-001	W	88313	189019	11/05/2021 14:11	11/04/2021 23:39
SM 2540D -2011	Effluent VSP-4	Initial	21110310-001	W	188956	188956	11/04/2021 09:17	11/04/2021 09:17
	188956-1-BKS	BKS	188956-1-BKS	W	188956	188956	11/04/2021 09:17	11/04/2021 09:17
	188956-1-BLK	BLK	188956-1-BLK	W	188956	188956	11/04/2021 09:17	11/04/2021 09:17
	B3-2021-Q4-01-001 D	MD	21110204-001 D	W	188956	188956	11/04/2021 09:17	11/04/2021 09:17
	Discharge - 103021 D	MD	21110315-001 D	W	188956	188956	11/04/2021 09:17	11/04/2021 09:17
SM 5210B -2011	Effluent VSP-4	Initial	21110310-001	W	189308	189308	11/08/2021 16:00	11/08/2021 16:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110310

Analytical Method: SM 2540D -2011

Seq Number: 188956 Matrix: Water
MB Sample Id: 188956-1-BLK LCS Sample Id: 188956-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	104.2	99.80	96	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP

Seq Number: 188985 Matrix: Water Date Prep: 11/04/21
MB Sample Id: 88313-1-BLK LCS Sample Id: 88313-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.39	98	85-115	ug/L	
Lead	<1.000	40.00	36.89	92	85-115	ug/L	
Nickel	<1.000	40.00	39.34	98	85-115	ug/L	
Zinc	<20.00	200	187.6	94	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP

Seq Number: 189016 Matrix: Water Date Prep: 11/04/21
MB Sample Id: 88312-1-BLK LCS Sample Id: 88312-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.53	101	85-115	ug/L	
Lead	<1.000	40.00	41.66	104	85-115	ug/L	
Nickel	<1.000	40.00	39.92	100	85-115	ug/L	
Zinc	<20.00	200	197.8	99	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110310

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 188958
Matrix: Water
Date Prep: 11/03/21
MB Sample Id: 88318-1-BLK
LCS Sample Id: 88318-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	50.20	100	60-140	ug/L	
Acrylonitrile	<5.000	50.00	47.48	95	60-140	ug/L	
Benzene	<1.000	50.00	48.74	97	65-135	ug/L	
Bromodichloromethane	<1.000	50.00	49.95	100	65-135	ug/L	
Bromoform	<1.000	50.00	52.63	105	70-130	ug/L	
Bromomethane	<1.000	50.00	52.13	104	15-185	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.79	102	70-130	ug/L	
Chlorobenzene	<1.000	50.00	48.58	97	65-135	ug/L	
Chloroethane	<1.000	50.00	45.89	92	40-160	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	65.97	132	1-225	ug/L	
Chloroform	<1.000	50.00	48.12	96	70-135	ug/L	
Chloromethane	<1.000	50.00	46.14	92	1-205	ug/L	
Dibromochloromethane	<1.000	50.00	52.71	105	70-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.07	102	65-135	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.58	99	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.19	96	65-135	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.10	102	54-148	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.71	97	70-130	ug/L	
1,2-Dichloroethane	<1.000	50.00	47.32	95	70-130	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.05	104	50-150	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.89	98	35-165	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.93	108	25-175	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	54.26	109	50-150	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.87	100	70-130	ug/L	
Ethylbenzene	<1.000	50.00	49.34	99	60-140	ug/L	
Methylene Chloride	<1.000	50.00	48.50	97	60-140	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.88	98	60-140	ug/L	
Tetrachloroethene	<1.000	50.00	53.72	107	70-130	ug/L	
Toluene	<1.000	50.00	48.91	98	70-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.40	105	70-130	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.30	99	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.83	98	65-135	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.97	106	50-150	ug/L	
Vinyl Chloride	<1.000	50.00	49.85	100	5-195	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		98		87-120	%
4-Bromofluorobenzene	98		94		85-147	%
Toluene-D8	98		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110310

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 188958 Matrix: Waste Water Date Prep: 11/03/21
Parent Sample Id: 21110310-001 MS Sample Id: 21110310-001 S MSD Sample Id: 21110310-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	50.96	102	47.51	95	40-160	7	60	ug/L	
Acrylonitrile	<5.000	50.00	48.93	98	46.63	93	40-160	5	60	ug/L	
Benzene	<1.000	50.00	50.16	100	48.28	97	37-151	3	61	ug/L	
Bromodichloromethane	<1.000	50.00	50.50	101	49.43	99	35-155	2	56	ug/L	
Bromoform	<1.000	50.00	52.78	106	52.52	105	45-169	1	42	ug/L	
Bromomethane	<1.000	50.00	52.90	106	51.85	104	1-242	2	61	ug/L	
Carbon Tetrachloride	<1.000	50.00	51.69	103	49.40	99	70-140	4	41	ug/L	
Chlorobenzene	<1.000	50.00	49.72	99	49.17	98	37-160	1	53	ug/L	
Chloroethane	<1.000	50.00	46.81	94	44.87	90	14-230	4	78	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	64.31	129	65.17	130	1-305	1	71	ug/L	
Chloroform	<1.000	50.00	49.19	98	47.44	95	51-138	3	54	ug/L	
Chloromethane	<1.000	50.00	45.27	91	45.55	91	1-273	0	60	ug/L	
Dibromochloromethane	<1.000	50.00	52.94	106	53.34	107	53-149	1	50	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.57	99	51.77	104	18-190	5	57	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.01	96	50.12	100	59-156	4	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.35	93	48.73	97	18-190	4	57	ug/L	
Dichlorodifluoromethane	<1.000	50.00	49.74	99	47.27	95	43-150	4	27	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.80	100	49.39	99	59-155	1	40	ug/L	
1,2-Dichloroethane	<1.000	50.00	47.84	96	46.61	93	49-155	3	49	ug/L	
1,1-Dichloroethene	<1.000	50.00	53.69	107	50.89	102	1-234	5	32	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.69	99	48.42	97	1-210	2	55	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.61	105	51.78	104	1-227	1	58	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	52.54	105	51.78	104	17-183	1	86	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	51.13	102	48.87	98	54-156	4	45	ug/L	
Ethylbenzene	<1.000	50.00	50.47	101	49.38	99	37-162	2	63	ug/L	
Methylene Chloride	<1.000	50.00	49.15	98	47.96	96	1-221	2	28	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.72	97	50.61	101	46-157	4	61	ug/L	
Tetrachloroethene	<1.000	50.00	53.69	107	52.06	104	64-148	3	39	ug/L	
Toluene	<1.000	50.00	49.59	99	48.09	96	47-150	3	41	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.65	107	51.12	102	52-162	5	36	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.73	99	49.04	98	52-150	1	45	ug/L	
Trichloroethene	<1.000	50.00	49.82	100	47.79	96	70-157	4	48	ug/L	
Trichlorofluoromethane	<1.000	50.00	54.40	109	51.24	102	17-181	7	84	ug/L	
Vinyl Chloride	<1.000	50.00	51.04	102	45.46	91	1-251	11	66	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	99		100		87-120	%
4-Bromofluorobenzene	92		95		85-147	%
Toluene-D8	98		98		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 188985 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 11/04/21 13:38

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.26	101	85-115	ug/L	
Lead	40.00	36.01	90	85-115	ug/L	
Nickel	40.00	39.30	98	85-115	ug/L	
Zinc	200	193.4	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188985 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 11/04/21 14:39

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	39.42	99	85-115	ug/L	
Lead	40.00	35.52	89	85-115	ug/L	
Nickel	40.00	38.85	97	85-115	ug/L	
Zinc	200	194	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 189019 Matrix: Water
CCV Sample Id: CCV 8 Analyzed Date: 11/05/21 00:25

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	40.00	36.29	91	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188985 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/04/21 12:14

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	39.53	99	90-110	ug/L	
Lead	40.00	38.18	95	90-110	ug/L	
Nickel	40.00	38.36	96	90-110	ug/L	
Zinc	200	181.1	91	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 189019 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/04/21 16:26

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	40.00	36.87	92	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 189016 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 11/04/21 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	37.78	94	85-115	ug/L	
Lead	40.00	39.12	98	85-115	ug/L	
Nickel	40.00	36.76	92	85-115	ug/L	
Zinc	200	184.2	92	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 189016 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 11/04/21 21:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	37.40	94	85-115	ug/L	
Lead	40.00	41.37	103	85-115	ug/L	
Nickel	40.00	36.13	90	85-115	ug/L	
Zinc	200	182	91	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 189016 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 11/04/21 22:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	36.79	92	85-115	ug/L	
Lead	40.00	39.45	99	85-115	ug/L	
Nickel	40.00	36.00	90	85-115	ug/L	
Zinc	200	181.2	91	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 189016 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/04/21 16:26

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	37.84	95	90-110	ug/L	
Lead	40.00	37.52	94	90-110	ug/L	
Nickel	40.00	36.87	92	90-110	ug/L	
Zinc	200	188.9	94	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110310

Analytical Method: EPA 624 .1

Seq Number: 188440 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/13/21 18:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05223	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05125	103	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04586	92	54-148	mg/L	
Chloromethane	0.05000	0.04808	96	57-135	mg/L	
Vinyl Chloride	0.05000	0.04691	94	64-129	mg/L	
Bromomethane	0.05000	0.04849	97	67-132	mg/L	
Chloroethane	0.05000	0.04703	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05028	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05211	104	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05073	101	67-126	mg/L	
Methylene Chloride	0.05000	0.05035	101	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04984	100	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05129	103	76-127	mg/L	
Chloroform	0.05000	0.05106	102	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05294	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05261	105	73-130	mg/L	
Benzene	0.05000	0.05173	103	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05078	102	77-129	mg/L	
Trichloroethene	0.05000	0.05073	101	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05160	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05282	106	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05446	109	76-116	mg/L	
Toluene	0.05000	0.05094	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05518	110	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05094	102	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05058	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05374	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05013	100	72-128	mg/L	
Ethylbenzene	0.05000	0.05229	105	69-131	mg/L	
Bromoform	0.05000	0.05086	102	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05095	102	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.04895	98	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04796	96	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05019	100	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	99	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 21110310 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② Preservatives Use Codes: 1,6 | 6 | 6 | 3 | 3

Analysis/Method Required ③: VOCs (624) | BOD | TSS | Total metals + hardness (200.7) | Dissolved metals (200.8)

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (624)	BOD	TSS	Total metals + hardness (200.7)	Dissolved metals (200.8)
1	Effluent VSP-4	11/3/21	1040	WW	7	G	X	X	X	X	X

⑤

Relinquished By:	Date	Time	Received By:
(1) Sean Burke	11/3/21	1215	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 3.1°C

Custody Seal: Cooler Intact

Coolers: 1 Temp: 4.5°-5.1°C

Shipping Carrier: CIML

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21110310

Client Name WSP USA - Herndon
Disposal Date 12/08/2021

Received By Thomas Wingate
Date Received 11/03/2021 12:15:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	5.1
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 11/03/2021

PM Review and Approval: Amber Confer Date: 11/03/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110312

November 17, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21110312**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21110312**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 8, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21110312

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/03/2021 at 12:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21110312-001	Effluent VSP-4	WASTE WATER	11/03/21 10:40
21110312-002	Influent VSP-1	GROUND WATER	11/03/21 11:00
21110312-003	TB-110321	WATER	11/03/21 11:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110312

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/03/2021 10:40** **PSS Sample ID: 21110312-001**
Matrix: WASTE WATER **Date/Time Received: 11/03/2021 12:15**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	11/11/21	11/11/21 10:21	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*103*	*%*	*80-120*		*1*	*11/11/21*	*11/11/21 10:21*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110312

Sample ID: Influent VSP-1 **Date/Time Sampled: 11/03/2021 11:00** **PSS Sample ID: 21110312-002**
Matrix: GROUND WATER **Date/Time Received: 11/03/2021 12:15**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**99**	ug/L	10		10	11/11/21	11/11/21 11:06	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*98*	*%*	*80-120*		*10*	*11/11/21*	*11/11/21 11:06*	*1011*

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	11/04/21	11/04/21 14:13	1011
Benzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Bromochloromethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Bromoform	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Bromomethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	11/04/21	11/04/21 14:13	1011
Carbon Disulfide	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Carbon tetrachloride	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Chlorobenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Chloroethane	**3.8**	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Chloroform	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Chloromethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Cyclohexane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,1-Dichloroethane	**39**	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2-Dichloroethane	**1.2**	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,1-Dichloroethene	**190**	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110312

Sample ID: Influent VSP-1 **Date/Time Sampled: 11/03/2021 11:00** **PSS Sample ID: 21110312-002**
Matrix: GROUND WATER **Date/Time Received: 11/03/2021 12:15**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Ethylbenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	11/04/21	11/04/21 14:13	1011
Isopropylbenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Methyl Acetate	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Methylcyclohexane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Methylene chloride	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	11/04/21	11/04/21 14:13	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Naphthalene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Styrene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Tetrachloroethene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Toluene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,1,1-Trichloroethane	**15**	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Trichloroethene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
Vinyl chloride	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011
m&p-Xylene	ND	ug/L	2.0		1	11/04/21	11/04/21 14:13	1011
o-Xylene	ND	ug/L	1.0		1	11/04/21	11/04/21 14:13	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*97*	*%*	*88-112*		*1*	*11/04/21*	*11/04/21 14:13*	*1011*
Dibromofluoromethane	*102*	*%*	*93-111*		*1*	*11/04/21*	*11/04/21 14:13*	*1011*
Toluene-D8	*99*	*%*	*94-107*		*1*	*11/04/21*	*11/04/21 14:13*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110312

Sample ID: TB-110321 **Date/Time Sampled: 11/03/2021 11:10** **PSS Sample ID: 21110312-003**
Matrix: WATER **Date/Time Received: 11/03/2021 12:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	11/03/21	11/03/21 17:28	1011
Acrylonitrile	ND	ug/L	5.0		1	11/03/21	11/03/21 17:28	1011
Benzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Bromoform	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Bromomethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Chlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Chloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Chloroform	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Chloromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Ethylbenzene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Methylene Chloride	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Tetrachloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Toluene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Trichloroethene	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/03/21	11/03/21 17:28	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21110312

Sample ID: TB-110321 **Date/Time Sampled: 11/03/2021 11:10** **PSS Sample ID: 21110312-003**
Matrix: WATER **Date/Time Received: 11/03/2021 12:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*101*	*%*	*87-120*	*1*	*11/03/21*	*11/03/21 17:28*	*1011*
4-Bromofluorobenzene	*97*	*%*	*85-147*	*1*	*11/03/21*	*11/03/21 17:28*	*1011*
Toluene-D8	*98*	*%*	*88-110*	*1*	*11/03/21*	*11/03/21 17:28*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	11/11/21	11/11/21 10:44	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*102*	*%*	*80-120*	*1*	*11/11/21*	*11/11/21 10:44*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21110312

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21110312

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-110321	Initial	21110312-003	W	88318	188958	11/03/2021 15:00	11/03/2021 17:28
	88318-1-BKS	BKS	88318-1-BKS	W	88318	188958	11/03/2021 09:52	11/03/2021 10:57
	88318-1-BLK	BLK	88318-1-BLK	W	88318	188958	11/03/2021 09:52	11/03/2021 13:59
	Effluent VSP-4 S	MS	21110310-001 S	W	88318	188958	11/03/2021 15:00	11/03/2021 18:59
	Effluent VSP-4 SD	MSD	21110310-001 S	W	88318	188958	11/03/2021 15:00	11/03/2021 19:22
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21110312-001	W	88423	189174	11/11/2021 07:50	11/11/2021 10:21
	Influent VSP-1	Initial	21110312-002	W	88423	189174	11/11/2021 07:50	11/11/2021 11:06
	TB-110321	Initial	21110312-003	W	88423	189174	11/11/2021 07:50	11/11/2021 10:44
	88423-1-BKS	BKS	88423-1-BKS	W	88423	189174	11/11/2021 07:50	11/11/2021 08:50
	88423-1-BLK	BLK	88423-1-BLK	W	88423	189174	11/11/2021 07:50	11/11/2021 09:59
	88423-1-BSD	BSD	88423-1-BSD	W	88423	189174	11/11/2021 07:50	11/11/2021 09:12
SW-846 8260 D	Influent VSP-1	Initial	21110312-002	W	88335	188995	11/04/2021 10:40	11/04/2021 14:13
	88335-1-BKS	BKS	88335-1-BKS	W	88335	188995	11/04/2021 10:40	11/04/2021 10:40
	88335-1-BLK	BLK	88335-1-BLK	W	88335	188995	11/04/2021 10:40	11/04/2021 12:19
	MW-1 S	MS	21110402-001 S	W	88335	188995	11/04/2021 10:40	11/04/2021 14:35
	MW-1 SD	MSD	21110402-001 S	W	88335	188995	11/04/2021 10:40	11/04/2021 14:58

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 188958
Matrix: Water
Date Prep: 11/03/21
MB Sample Id: 88318-1-BLK
LCS Sample Id: 88318-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	50.20	100	60-140	ug/L	
Acrylonitrile	<5.000	50.00	47.48	95	60-140	ug/L	
Benzene	<1.000	50.00	48.74	97	65-135	ug/L	
Bromodichloromethane	<1.000	50.00	49.95	100	65-135	ug/L	
Bromoform	<1.000	50.00	52.63	105	70-130	ug/L	
Bromomethane	<1.000	50.00	52.13	104	15-185	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.79	102	70-130	ug/L	
Chlorobenzene	<1.000	50.00	48.58	97	65-135	ug/L	
Chloroethane	<1.000	50.00	45.89	92	40-160	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	65.97	132	1-225	ug/L	
Chloroform	<1.000	50.00	48.12	96	70-135	ug/L	
Chloromethane	<1.000	50.00	46.14	92	1-205	ug/L	
Dibromochloromethane	<1.000	50.00	52.71	105	70-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.07	102	65-135	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.58	99	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.19	96	65-135	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.10	102	54-148	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.71	97	70-130	ug/L	
1,2-Dichloroethane	<1.000	50.00	47.32	95	70-130	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.05	104	50-150	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.89	98	35-165	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.93	108	25-175	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	54.26	109	50-150	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.87	100	70-130	ug/L	
Ethylbenzene	<1.000	50.00	49.34	99	60-140	ug/L	
Methylene Chloride	<1.000	50.00	48.50	97	60-140	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.88	98	60-140	ug/L	
Tetrachloroethene	<1.000	50.00	53.72	107	70-130	ug/L	
Toluene	<1.000	50.00	48.91	98	70-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.40	105	70-130	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.30	99	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.83	98	65-135	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.97	106	50-150	ug/L	
Vinyl Chloride	<1.000	50.00	49.85	100	5-195	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		98		87-120	%
4-Bromofluorobenzene	98		94		85-147	%
Toluene-D8	98		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 189174 Matrix: Water Date Prep: 11/11/21
MB Sample Id: 88423-1-BLK LCS Sample Id: 88423-1-BKS LCSD Sample Id: 88423-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	32.10	107	32.03	107	50-150	0	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		101		102		80-120	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 188995
Matrix: Water
Date Prep: 11/04/21
MB Sample Id: 88335-1-BLK
LCS Sample Id: 88335-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	54.59	109	26-128	ug/L	
Benzene	<1.000	50.00	44.65	89	82-115	ug/L	
Bromochloromethane	<1.000	50.00	47.72	95	91-115	ug/L	
Bromodichloromethane	<1.000	50.00	46.22	92	88-122	ug/L	
Bromoform	<1.000	50.00	48.31	97	79-122	ug/L	
Bromomethane	<1.000	50.00	47.43	95	50-143	ug/L	
2-Butanone (MEK)	<5.000	50.00	52.43	105	51-113	ug/L	
Carbon Disulfide	<1.000	50.00	45.52	91	71-132	ug/L	
Carbon tetrachloride	<1.000	50.00	46.11	92	85-125	ug/L	
Chlorobenzene	<1.000	50.00	43.53	87	80-116	ug/L	
Chloroethane	<1.000	50.00	41.29	83	58-115	ug/L	
Chloroform	<1.000	50.00	44.33	89	81-113	ug/L	
Chloromethane	<1.000	50.00	41.19	82	48-132	ug/L	
Cyclohexane	<1.000	50.00	52.43	105	81-125	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	45.75	92	63-122	ug/L	
Dibromochloromethane	<1.000	50.00	47.94	96	84-120	ug/L	
1,2-Dibromoethane	<1.000	50.00	47.39	95	82-122	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.14	88	79-122	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	43.02	86	79-122	ug/L	
Dichlorodifluoromethane	<1.000	50.00	44.77	90	73-126	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	41.84	84	79-119	ug/L	
1,1-Dichloroethane	<1.000	50.00	44.75	90	70-121	ug/L	
1,2-Dichloroethane	<1.000	50.00	43.59	87	78-118	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	46.30	93	76-116	ug/L	
1,1-Dichloroethene	<1.000	50.00	47.16	94	71-124	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.98	90	79-121	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.85	98	83-123	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	49.45	99	82-125	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	45.50	91	74-118	ug/L	
Ethylbenzene	<1.000	50.00	44.50	89	85-120	ug/L	
2-Hexanone (MBK)	<5.000	50.00	49.81	100	51-126	ug/L	
Isopropylbenzene	<1.000	50.00	45.65	91	84-125	ug/L	
Methyl Acetate	<1.000	50.00	48.39	97	75-114	ug/L	
Methylcyclohexane	<1.000	50.00	53.24	106	88-124	ug/L	
Methylene chloride	<1.000	50.00	44.45	89	70-117	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	47.97	96	63-112	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	48.43	97	70-127	ug/L	
Naphthalene	<1.000	50.00	48.49	97	71-138	ug/L	
Styrene	<1.000	50.00	48.07	96	78-121	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	42.97	86	70-118	ug/L	
Tetrachloroethene	<1.000	50.00	48.97	98	83-113	ug/L	
Toluene	<1.000	50.00	44.58	89	85-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	47.21	94	80-134	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	47.05	94	83-134	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.88	96	84-122	ug/L	
Trichloroethene	<1.000	50.00	44.51	89	82-117	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.63	91	82-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.17	96	71-123	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	49.26	99	72-126	ug/L	
Vinyl chloride	<1.000	50.00	44.99	90	75-113	ug/L	
m&p-Xylene	<2.000	100	91.28	91	87-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 188995
Matrix: Water
Date Prep: 11/04/21
MB Sample Id: 88335-1-BLK
LCS Sample Id: 88335-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	46.55	93	87-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	97		92		88-112	%
Dibromofluoromethane	102		100		93-111	%
Toluene-D8	98		99		94-107	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: EPA 624 .1

Seq Number: 188440 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/13/21 18:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05223	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05125	103	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04586	92	54-148	mg/L	
Chloromethane	0.05000	0.04808	96	57-135	mg/L	
Vinyl Chloride	0.05000	0.04691	94	64-129	mg/L	
Bromomethane	0.05000	0.04849	97	67-132	mg/L	
Chloroethane	0.05000	0.04703	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05028	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05211	104	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05073	101	67-126	mg/L	
Methylene Chloride	0.05000	0.05035	101	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04984	100	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05129	103	76-127	mg/L	
Chloroform	0.05000	0.05106	102	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05294	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05261	105	73-130	mg/L	
Benzene	0.05000	0.05173	103	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05078	102	77-129	mg/L	
Trichloroethene	0.05000	0.05073	101	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05160	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05282	106	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05446	109	76-116	mg/L	
Toluene	0.05000	0.05094	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05518	110	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05094	102	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05058	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05374	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05013	100	72-128	mg/L	
Ethylbenzene	0.05000	0.05229	105	69-131	mg/L	
Bromoform	0.05000	0.05086	102	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05095	102	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.04895	98	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04796	96	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05019	100	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	99	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	99	88-110	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 188602 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/20/21 11:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.76	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	98	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 189174 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 11/11/21 08:15

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.63	102	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	103	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 188602 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/20/21 11:23

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	27.34	91	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 188995 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 11/04/21 10:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	54.59	109	80-120	ug/L	
Benzene	50.00	44.65	89	80-120	ug/L	
Bromochloromethane	50.00	47.72	95	80-120	ug/L	
Bromodichloromethane	50.00	46.22	92	80-120	ug/L	
Bromoform	50.00	48.31	97	80-120	ug/L	
Bromomethane	50.00	47.43	95	80-120	ug/L	
2-Butanone (MEK)	50.00	52.43	105	80-120	ug/L	
Carbon Disulfide	50.00	45.52	91	80-120	ug/L	
Carbon tetrachloride	50.00	46.11	92	80-120	ug/L	
Chlorobenzene	50.00	43.53	87	80-120	ug/L	
Chloroethane	50.00	41.29	83	80-120	ug/L	
Chloroform	50.00	44.33	89	80-120	ug/L	
Chloromethane	50.00	41.19	82	80-120	ug/L	
Cyclohexane	50.00	52.43	105	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	45.75	92	80-120	ug/L	
Dibromochloromethane	50.00	47.94	96	80-120	ug/L	
1,2-Dibromoethane	50.00	47.39	95	80-120	ug/L	
1,2-Dichlorobenzene	50.00	44.14	88	80-120	ug/L	
1,3-Dichlorobenzene	50.00	43.02	86	80-120	ug/L	
Dichlorodifluoromethane	50.00	44.77	90	80-120	ug/L	
1,4-Dichlorobenzene	50.00	41.84	84	80-120	ug/L	
1,1-Dichloroethane	50.00	44.75	90	80-120	ug/L	
1,2-Dichloroethane	50.00	43.59	87	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	46.30	93	80-120	ug/L	
1,1-Dichloroethene	50.00	47.16	94	80-120	ug/L	
1,2-Dichloropropane	50.00	44.98	90	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	48.85	98	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	49.45	99	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	45.50	91	80-120	ug/L	
Ethylbenzene	50.00	44.50	89	80-120	ug/L	
2-Hexanone (MBK)	50.00	49.81	100	80-120	ug/L	
Isopropylbenzene	50.00	45.65	91	80-120	ug/L	
Methyl Acetate	50.00	48.39	97	80-120	ug/L	
Methylcyclohexane	50.00	53.24	106	80-120	ug/L	
Methylene chloride	50.00	44.45	89	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	47.97	96	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	48.43	97	80-120	ug/L	
Naphthalene	50.00	48.49	97	80-120	ug/L	
Styrene	50.00	48.07	96	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	42.97	86	80-120	ug/L	
Tetrachloroethene	50.00	48.97	98	80-120	ug/L	
Toluene	50.00	44.58	89	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	47.21	94	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	47.05	94	80-120	ug/L	
1,1,1-Trichloroethane	50.00	47.88	96	80-120	ug/L	
Trichloroethene	50.00	44.51	89	80-120	ug/L	
1,1,2-Trichloroethane	50.00	45.63	91	80-120	ug/L	
Trichlorofluoromethane	50.00	48.17	96	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	49.26	99	80-120	ug/L	
Vinyl chloride	50.00	44.99	90	80-120	ug/L	
m&p-Xylene	100	91.28	91	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: SW-846 8260 D

Seq Number: 188995 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 11/04/21 10:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	46.55	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	92	80-120	%	
Dibromofluoromethane	100	80-120	%	
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 188436 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/13/21 18:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	46.64	93	70-130	ug/L	
Benzene	50.00	51.73	103	70-130	ug/L	
Bromochloromethane	50.00	52.94	106	70-130	ug/L	
Bromodichloromethane	50.00	52.82	106	70-130	ug/L	
Bromoform	50.00	50.86	102	70-130	ug/L	
Bromomethane	50.00	48.49	97	70-130	ug/L	
2-Butanone (MEK)	50.00	49.94	100	70-130	ug/L	
Carbon Disulfide	50.00	49.14	98	70-130	ug/L	
Carbon tetrachloride	50.00	52.61	105	70-130	ug/L	
Chlorobenzene	50.00	50.13	100	70-130	ug/L	
Chloroethane	50.00	47.03	94	70-130	ug/L	
Chloroform	50.00	51.06	102	70-130	ug/L	
Chloromethane	50.00	48.08	96	70-130	ug/L	
Cyclohexane	50.00	53.65	107	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	54.55	109	70-130	ug/L	
Dibromochloromethane	50.00	53.74	107	70-130	ug/L	
1,2-Dibromoethane	50.00	52.55	105	70-130	ug/L	
1,2-Dichlorobenzene	50.00	50.19	100	70-130	ug/L	
1,3-Dichlorobenzene	50.00	48.95	98	70-130	ug/L	
Dichlorodifluoromethane	50.00	45.86	92	70-130	ug/L	
1,4-Dichlorobenzene	50.00	47.96	96	70-130	ug/L	
1,1-Dichloroethane	50.00	51.29	103	70-130	ug/L	
1,2-Dichloroethane	50.00	50.78	102	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	51.51	103	70-130	ug/L	
1,1-Dichloroethene	50.00	50.73	101	70-130	ug/L	
1,2-Dichloropropane	50.00	51.60	103	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	54.46	109	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	55.18	110	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	49.84	100	70-130	ug/L	
Ethylbenzene	50.00	52.29	105	70-130	ug/L	
2-Hexanone (MBK)	50.00	52.07	104	70-130	ug/L	
Isopropylbenzene	50.00	52.78	106	70-130	ug/L	
Methyl Acetate	50.00	53.92	108	70-130	ug/L	
Methylcyclohexane	50.00	53.05	106	70-130	ug/L	
Methylene chloride	50.00	50.35	101	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.67	107	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	52.49	105	70-130	ug/L	
Naphthalene	50.00	54.69	109	70-130	ug/L	
Styrene	50.00	53.34	107	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	50.95	102	70-130	ug/L	
Tetrachloroethene	50.00	50.58	101	70-130	ug/L	
Toluene	50.00	50.94	102	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	50.69	101	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	50.19	100	70-130	ug/L	
1,1,1-Trichloroethane	50.00	52.94	106	70-130	ug/L	
Trichloroethene	50.00	50.73	101	70-130	ug/L	
1,1,2-Trichloroethane	50.00	50.94	102	70-130	ug/L	
Trichlorofluoromethane	50.00	50.28	101	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	50.87	102	70-130	ug/L	
Vinyl chloride	50.00	46.91	94	70-130	ug/L	
m&p-Xylene	100	103.8	104	70-130	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21110312

Analytical Method: SW-846 8260 D

Seq Number: 188436 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/13/21 18:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	51.76	104	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	70-130	%	
Dibromofluoromethane	99	70-130	%	
Toluene-D8	99	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 21110312 | PAGE 1 OF 1

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1	1								
							Analysis/ Method Required ③	1,4-dioxane (8260B SIM)	VOCs (8260)	VOCs (624)								
1	Effluent VSP-4	11/3/21	1040	WW	3	G		X										
2	Influent VSP-1	11/3/21	1100	GW	6	G		X	X									
3	TB-110321	—	—	TB	4	—		X		X								

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	11/3/21	1215	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER _____

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: YES TB: 3.1°C

Custody Seal: Cooler-Intact

Coolers: 1 Temp: 5.4-5.8°C

Shipping Carrier: ~~FE~~ Client 11/3/21 TH

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21110312

Client Name WSP USA - Herndon
Disposal Date 12/08/2021

Received By Thomas Wingate
Date Received 11/03/2021 12:15:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	5.8
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 11/03/2021

PM Review and Approval: Amber Confer Date: 11/03/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21111912

November 23, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21111912**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21111912**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 24, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

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Baltimore, MD 21228
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800-932-9047
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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21111912

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/19/2021 at 01:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21111912-001	Effluent VSP-4	WASTE WATER	11/19/21 10:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21111912

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/19/2021 10:00** **PSS Sample ID: 21111912-001**
Matrix: WASTE WATER **Date/Time Received: 11/19/2021 13:20**

Total Nickel — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Nickel	**24.4**	ug/L	1.00		1	11/21/21	11/22/21 00:46	1064

Dissolved Nickel — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Nickel	**16.2**	ug/L	1.00		1	11/21/21	11/21/21 21:07	1064

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Project Name: Kop-Flex

PSS Project No.: 21111912

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21111912

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21111912-001	W	88551	189526	11/21/2021 12:00	11/22/2021 00:46
	88551-1-BKS	BKS	88551-1-BKS	W	88551	189526	11/21/2021 12:00	11/21/2021 23:31
	88551-1-BLK	BLK	88551-1-BLK	W	88551	189526	11/21/2021 12:00	11/21/2021 23:26
	Millville 001 S	MS	21111704-001 S	W	88551	189526	11/21/2021 12:00	11/21/2021 23:40
	Effluent VSP-4 S	MS	21111912-001 S	W	88551	189526	11/21/2021 12:00	11/22/2021 00:50
	Millville 001 SD	MSD	21111704-001 S	W	88551	189526	11/21/2021 12:00	11/21/2021 23:45
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21111912-001	W	88553	189528	11/21/2021 14:41	11/21/2021 21:07
	88553-1-BKS	BKS	88553-1-BKS	W	88553	189528	11/21/2021 14:41	11/21/2021 20:11
	88553-1-BLK	BLK	88553-1-BLK	W	88553	189528	11/21/2021 14:41	11/21/2021 20:06
	Millville 001 S	MS	21111704-001 S	W	88553	189528	11/21/2021 14:41	11/21/2021 20:20
	Millville 001 SD	MSD	21111704-001 S	W	88553	189528	11/21/2021 14:41	11/21/2021 20:24

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21111912

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 189526 Matrix: Water Date Prep: 11/21/21
MB Sample Id: 88551-1-BLK LCS Sample Id: 88551-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	40.00	36.65	92	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 189526 Matrix: Waste Water Date Prep: 11/21/21
Parent Sample Id: 21111912-001 MS Sample Id: 21111912-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Flag
Nickel	24.39	40.00	56.31	80	70-130	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 189528 Matrix: Water Date Prep: 11/21/21
MB Sample Id: 88553-1-BLK LCS Sample Id: 88553-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	40.00	40.72	102	85-115	ug/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 189526 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 11/21/21 22:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	40.00	45.52	114	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 189526 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 11/21/21 23:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	40.00	44.27	111	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 189526 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 11/22/21 01:00

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	40.00	43.82	110	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 189526 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/21/21 19:33

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	40.00	42.77	107	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 189528 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 11/21/21 20:57

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	40.00	43.59	109	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 189528 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 11/21/21 21:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	40.00	44.39	111	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21111912

Analytical Method: EPA 200.8 Dissolved

Seq Number: 189528 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/21/21 19:33

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	40.00	42.77	107	90-110	ug/L	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21111912 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		Analysis/ Method Required: Total metals nickel 0.45µ (200.8)	Dissolved metals nickel only (200.8)
							3	3		
1	Effluent VSP-4	11/19/21	1000	WW	2	G	X	X		

⑤ ④

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	1320	11/19/21	
(2)			
(3)			
(4)			

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☒ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 1.2°C

Custody Seal: Coder-Intact

Coolers: Temp: 0.4°-1.5°C

Shipping Carrier: Client

Special Instructions: Dissolved metals field-filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21111912

Client Name WSP USA - Herndon
Disposal Date 12/24/2021

Received By Thomas Wingate
Date Received 11/19/2021 01:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	1.5
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	2

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 11/19/2021

PM Review and Approval: Amber Confer Date: 11/19/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122907

January 13, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21122907**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21122907**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 2, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21122907

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/29/2021 at 01:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21122907-001	Effluent VSP-4	WASTE WATER	12/29/21 12:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122907

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/29/2021 12:30** **PSS Sample ID: 21122907-001**
Matrix: WASTE WATER **Date/Time Received: 12/29/2021 13:15**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**4.2**	ug/L	1.0		1	01/04/22	01/04/22 22:14	1064
Lead	ND	ug/L	1.0		1	01/04/22	01/05/22 18:50	1064
Nickel	**16.6**	ug/L	1.00		1	01/04/22	01/05/22 18:50	1064
Zinc	**28.0**	ug/L	20.0		1	01/04/22	01/04/22 22:14	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.0**	ug/L	1.0		1	01/04/22	01/05/22 21:44	1064
Lead	ND	ug/L	1.0		1	01/04/22	01/05/22 21:44	1064
Nickel	**13.4**	ug/L	1.00		1	01/04/22	01/05/22 21:44	1064
Zinc	ND	ug/L	20		1	01/04/22	01/05/22 21:44	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 190464 on Case Narrative.
pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	12/30/21	12/30/21 11:11	1011
Acrylonitrile	ND	ug/L	5.0		1	12/30/21	12/30/21 11:11	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Chloromethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Vinyl Chloride	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Bromomethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Chloroethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Methylene Chloride	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Chloroform	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Benzene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122907

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/29/2021 12:30** **PSS Sample ID: 21122907-001**
Matrix: WASTE WATER **Date/Time Received: 12/29/2021 13:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 190464 on Case Narrative.

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Bromodichloromethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Toluene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Tetrachloroethene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Dibromochloromethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Chlorobenzene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Ethylbenzene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
Bromoform	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	12/30/21	12/30/21 11:11	1011

Surrogate(s)	***Recovery***		***Limits***					
Dibromofluoromethane	*102*	*%*	*87-120*		*1*	*12/30/21*	*12/30/21 11:11*	*1011*
4-Bromofluorobenzene	*82*	*%*	*85-147*	*	*1*	*12/30/21*	*12/30/21 11:11*	*1011*
Toluene-D8	*98*	*%*	*88-110*		*1*	*12/30/21*	*12/30/21 11:11*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**21**	mg/L	0.66		1	01/09/22	01/09/22 17:40	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122907

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/29/2021 12:30** **PSS Sample ID: 21122907-001**
Matrix: WASTE WATER **Date/Time Received: 12/29/2021 13:15**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	12/30/21	12/30/21 14:10	1034

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 29-Dec-21 17:30

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		01/03/22	01/03/22 14:40	4005

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Project Name: Kop-Flex

PSS Project No.: 21122907

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

21122907: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds

Batch: 190464

Method exceedance: Quality control sample surrogate exceedances identified, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21122907

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	21122907-001	W	89028	190501	01/04/2022 10:24	01/04/2022 22:14
	89028-1-BKS	BKS	89028-1-BKS	W	89028	190501	01/04/2022 10:24	01/04/2022 22:09
	89028-1-BLK	BLK	89028-1-BLK	W	89028	190501	01/04/2022 10:24	01/04/2022 22:05
	Effluent VSP-4 S	MS	21122907-001 S	W	89028	190501	01/04/2022 10:24	01/04/2022 22:19
	Effluent VSP-4 SD	MSD	21122907-001 S	W	89028	190501	01/04/2022 10:24	01/04/2022 22:23
	89028-1-BKS	Reanalysis	89028-1-BKS	W	89028	190545	01/04/2022 10:24	01/05/2022 18:46
	89028-1-BLK	Reanalysis	89028-1-BLK	W	89028	190545	01/04/2022 10:24	01/05/2022 18:41
	Effluent VSP-4 S	Reanalysis	21122907-001 S	W	89028	190545	01/04/2022 10:24	01/05/2022 18:55
	Effluent VSP-4 SD	Reanalysis	21122907-001 S	W	89028	190545	01/04/2022 10:24	01/05/2022 19:00
	Effluent VSP-4	Reanalysis	21122907-001	W	89028	190545	01/04/2022 10:24	01/05/2022 18:50
EPA 200.8 Dissolved	Effluent VSP-4	Initial	21122907-001	W	89037	190543	01/04/2022 17:50	01/05/2022 21:44
	89037-1-BKS	BKS	89037-1-BKS	W	89037	190543	01/04/2022 17:50	01/05/2022 21:39
	89037-1-BLK	BLK	89037-1-BLK	W	89037	190543	01/04/2022 17:50	01/05/2022 21:35
	Effluent VSP-4 S	MS	21122907-001 S	W	89037	190543	01/04/2022 17:50	01/05/2022 21:49
	Effluent VSP-4 SD	MSD	21122907-001 S	W	89037	190543	01/04/2022 17:50	01/05/2022 21:53
EPA 624 .1	Effluent VSP-4	Initial	21122907-001	W	89011	190464	12/30/2021 08:22	12/30/2021 11:11
	89011-1-BKS	BKS	89011-1-BKS	W	89011	190464	12/30/2021 08:22	12/30/2021 09:05
	89011-1-BLK	BLK	89011-1-BLK	W	89011	190464	12/30/2021 08:22	12/30/2021 10:48
	Effluent VSP-4 S	MS	21122907-001 S	W	89011	190464	12/30/2021 08:22	12/30/2021 11:34
	Effluent VSP-4 SD	MSD	21122907-001 S	W	89011	190464	12/30/2021 08:22	12/30/2021 11:57
SM 2340B	Effluent VSP-4	Initial	21122907-001	W	89028	190601	01/10/2022 11:15	01/09/2022 17:40
SM 2540D -2015	Effluent VSP-4	Initial	21122907-001	W	190457	190457	12/30/2021 14:10	12/30/2021 14:10
	190457-1-BKS	BKS	190457-1-BKS	W	190457	190457	12/30/2021 14:10	12/30/2021 14:10
	190457-1-BLK	BLK	190457-1-BLK	W	190457	190457	12/30/2021 14:10	12/30/2021 14:10
	Pond 1 D	MD	21122903-001 D	W	190457	190457	12/30/2021 14:10	12/30/2021 14:10
SM 5210B -2011	Effluent VSP-4	Initial	21122907-001	W	190691	190691	01/03/2022 14:40	01/03/2022 14:40

Analytical Method: SM 2540D -2015

Seq Number: 190457 Matrix: Water
MB Sample Id: 190457-1-BLK LCS Sample Id: 190457-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	104	101.8	98	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP

Seq Number: 190501 Matrix: Water Date Prep: 01/04/22
MB Sample Id: 89028-1-BLK LCS Sample Id: 89028-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	48.93	98	85-115	ug/L	
Zinc	<20.00	100	96.49	96	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP

Seq Number: 190545 Matrix: Water Date Prep: 01/04/22
MB Sample Id: 89028-1-BLK LCS Sample Id: 89028-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	50.00	43.09	86	85-115	ug/L	
Nickel	<1.000	50.00	52.65	105	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP

Seq Number: 190501 Matrix: Waste Water Date Prep: 01/04/22
Parent Sample Id: 21122907-001 MS Sample Id: 21122907-001 S MSD Sample Id: 21122907-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	4.155	50.00	52.13	96	51.41	95	70-130	1	25	ug/L	
Nickel	18.49	50.00	69.77	103	68.77	101	70-130	2	25	ug/L	
Zinc	27.98	100	120.8	93	118.6	91	70-130	2	25	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP

Seq Number: 190545 Matrix: Waste Water Date Prep: 01/04/22
Parent Sample Id: 21122907-001 MS Sample Id: 21122907-001 S MSD Sample Id: 21122907-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Lead	<1.000	50.00	42.42	85	40.91	82	70-130	0	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122907

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 190543 Matrix: Water Date Prep: 01/04/22
MB Sample Id: 89037-1-BLK LCS Sample Id: 89037-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	47.07	94	85-115	ug/L	
Lead	<1.000	50.00	50.46	101	85-115	ug/L	
Nickel	<1.000	50.00	46.38	93	85-115	ug/L	
Zinc	<20.00	100	95.02	95	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 190543 Matrix: Waste Water Date Prep: 01/04/22
Parent Sample Id: 21122907-001 MS Sample Id: 21122907-001 S MSD Sample Id: 21122907-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.010	50.00	51.53	99	48.73	93	70-130	6	25	ug/L	
Lead	<1.000	50.00	51.50	103	47.95	96	70-130	7	25	ug/L	
Nickel	13.44	50.00	61.38	96	58.80	91	70-130	5	25	ug/L	
Zinc	<20.00	100	116.3	116	111.6	112	70-130	4	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122907

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 190464
Matrix: Water
Date Prep: 12/30/21
MB Sample Id: 89011-1-BLK
LCS Sample Id: 89011-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	41.09	82	60-140	ug/L	
Acrylonitrile	<5.000	50.00	36.55	73	60-140	ug/L	
Benzene	<1.000	50.00	47.65	95	65-135	ug/L	
Bromodichloromethane	<1.000	50.00	47.96	96	65-135	ug/L	
Bromoform	<1.000	50.00	57.71	115	70-130	ug/L	
Bromomethane	<1.000	50.00	46.83	94	15-185	ug/L	
Carbon Tetrachloride	<1.000	50.00	51.16	102	70-130	ug/L	
Chlorobenzene	<1.000	50.00	49.60	99	65-135	ug/L	
Chloroethane	<1.000	50.00	34.05	68	40-160	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	44.79	90	1-225	ug/L	
Chloroform	<1.000	50.00	45.81	92	70-135	ug/L	
Chloromethane	<1.000	50.00	31.91	64	1-205	ug/L	
Dibromochloromethane	<1.000	50.00	54.74	109	70-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.81	100	65-135	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.45	97	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.99	94	65-135	ug/L	
Dichlorodifluoromethane	<1.000	50.00	41.45	83	54-148	ug/L	
1,1-Dichloroethane	<1.000	50.00	40.93	82	70-130	ug/L	
1,2-Dichloroethane	<1.000	50.00	40.44	81	70-130	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.66	101	50-150	ug/L	
1,2-Dichloropropane	<1.000	50.00	43.52	87	35-165	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	50.77	102	25-175	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.15	100	50-150	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.55	99	70-130	ug/L	
Ethylbenzene	<1.000	50.00	46.69	93	60-140	ug/L	
Methylene Chloride	<1.000	50.00	45.52	91	60-140	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	40.22	80	60-140	ug/L	
Tetrachloroethene	<1.000	50.00	63.70	127	70-130	ug/L	
Toluene	<1.000	50.00	49.72	99	70-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.42	99	70-130	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.75	96	70-130	ug/L	
Trichloroethene	<1.000	50.00	49.68	99	65-135	ug/L	
Trichlorofluoromethane	<1.000	50.00	45.64	91	50-150	ug/L	
Vinyl Chloride	<1.000	50.00	41.80	84	5-195	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		100		87-120	%
4-Bromofluorobenzene	84	*	81	*	85-147	%
Toluene-D8	99		98		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122907

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 190464 Matrix: Waste Water Date Prep: 12/30/21
Parent Sample Id: 21122907-001 MS Sample Id: 21122907-001 S MSD Sample Id: 21122907-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	41.32	83	41.32	83	40-160	0	60	ug/L	
Acrylonitrile	<5.000	50.00	36.66	73	36.89	74	40-160	1	60	ug/L	
Dichlorodifluoromethane	<1.000	50.00	44.77	90	42.06	84	43-150	7	27	ug/L	
Chloromethane	<1.000	50.00	32.81	66	32.68	65	1-273	2	60	ug/L	
Vinyl Chloride	<1.000	50.00	44.32	89	42.07	84	1-251	6	66	ug/L	
Bromomethane	<1.000	50.00	50.84	102	48.95	98	1-242	4	61	ug/L	
Chloroethane	<1.000	50.00	36.06	72	34.23	68	14-230	6	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.38	99	46.78	94	17-181	5	84	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	40.05	80	41.25	83	1-305	4	71	ug/L	
1,1-Dichloroethene	<1.000	50.00	54.98	110	51.70	103	1-234	7	32	ug/L	
Methylene Chloride	<1.000	50.00	47.26	95	45.95	92	1-221	3	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	52.38	105	50.13	100	54-156	5	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	46.72	93	45.03	90	59-155	3	40	ug/L	
Chloroform	<1.000	50.00	48.34	97	46.55	93	51-138	4	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.43	107	51.30	103	52-162	4	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	55.20	110	52.63	105	70-140	5	41	ug/L	
Benzene	<1.000	50.00	50.48	101	48.59	97	37-151	4	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	41.91	84	41.06	82	49-155	2	49	ug/L	
Trichloroethene	<1.000	50.00	52.83	106	50.46	101	70-157	5	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.91	90	43.90	88	1-210	2	55	ug/L	
Bromodichloromethane	<1.000	50.00	49.58	99	48.71	97	35-155	2	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	51.83	104	50.93	102	1-227	2	58	ug/L	
Toluene	<1.000	50.00	52.70	105	50.70	101	47-150	4	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.97	102	50.29	101	17-183	1	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.01	98	48.74	97	52-150	1	45	ug/L	
Tetrachloroethene	<1.000	50.00	67.45	135	64.12	128	64-148	5	39	ug/L	
Dibromochloromethane	<1.000	50.00	56.40	113	56.43	113	53-149	0	50	ug/L	
Chlorobenzene	<1.000	50.00	52.58	105	51.44	103	37-160	2	53	ug/L	
Ethylbenzene	<1.000	50.00	49.71	99	47.77	96	37-162	3	63	ug/L	
Bromoform	<1.000	50.00	59.18	118	59.45	119	45-169	1	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	41.77	84	43.53	87	46-157	4	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.19	100	51.19	102	59-156	2	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.65	97	49.55	99	18-190	2	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.17	102	52.53	105	18-190	3	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	102		102		87-120	%
4-Bromofluorobenzene	80	*	83	*	85-147	%
Toluene-D8	99		98		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 190501 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 01/04/22 21:37

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	50.48	101	85-115	ug/L	
Zinc	100	99.25	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190501 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 01/04/22 22:37

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	49.92	100	85-115	ug/L	
Zinc	100	98.81	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190545 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 01/05/22 18:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	50.00	47.26	95	85-115	ug/L	
Nickel	50.00	52.33	105	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190545 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 01/05/22 19:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	50.00	44.87	90	85-115	ug/L	
Nickel	50.00	48.83	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190501 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/04/22 20:12

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.66	99	90-110	ug/L	
Zinc	100	97.51	98	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 190545 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/05/22 16:49

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	54.65	109	90-110	ug/L	
Nickel	50.00	49.74	99	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 190543 Matrix: Water

CCV Sample Id: CCV 4 Analyzed Date: 01/05/22 21:16

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.79	98	85-115	ug/L	
Lead	50.00	48.58	97	85-115	ug/L	
Nickel	50.00	48.19	96	85-115	ug/L	
Zinc	100	102.6	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 190543 Matrix: Water

CCV Sample Id: CCV 5 Analyzed Date: 01/05/22 22:07

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.29	97	85-115	ug/L	
Lead	50.00	50.71	101	85-115	ug/L	
Nickel	50.00	47.50	95	85-115	ug/L	
Zinc	100	96.59	97	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 190543 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/05/22 16:49

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.83	102	90-110	ug/L	
Lead	50.00	54.65	109	90-110	ug/L	
Nickel	50.00	49.74	99	90-110	ug/L	
Zinc	100	102.4	102	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122907

Analytical Method: EPA 624 .1

Seq Number: 188440 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/13/21 18:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05223	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05125	103	60-137	mg/L	
Benzene	0.05000	0.05173	103	73-132	mg/L	
Bromodichloromethane	0.05000	0.05282	106	81-125	mg/L	
Bromoform	0.05000	0.05086	102	70-130	mg/L	
Bromomethane	0.05000	0.04849	97	67-132	mg/L	
Carbon Tetrachloride	0.05000	0.05261	105	73-130	mg/L	
Chlorobenzene	0.05000	0.05013	100	72-128	mg/L	
Chloroethane	0.05000	0.04703	94	62-133	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05211	104	15-141	mg/L	
Chloroform	0.05000	0.05106	102	79-125	mg/L	
Chloromethane	0.05000	0.04808	96	57-135	mg/L	
Dibromochloromethane	0.05000	0.05374	107	70-132	mg/L	
1,2-Dichlorobenzene	0.05000	0.05019	100	65-133	mg/L	
1,3-Dichlorobenzene	0.05000	0.04895	98	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04796	96	69-127	mg/L	
Dichlorodifluoromethane	0.05000	0.04586	92	54-148	mg/L	
1,1-Dichloroethane	0.05000	0.05129	103	76-127	mg/L	
1,2-Dichloroethane	0.05000	0.05078	102	77-129	mg/L	
1,1-Dichloroethene	0.05000	0.05073	101	67-126	mg/L	
1,2-Dichloropropane	0.05000	0.05160	103	74-129	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05446	109	76-116	mg/L	
trans-1,3-dichloropropene	0.05000	0.05518	110	78-114	mg/L	
trans-1,2-dichloroethene	0.05000	0.04984	100	75-127	mg/L	
Ethylbenzene	0.05000	0.05229	105	69-131	mg/L	
Methylene Chloride	0.05000	0.05035	101	73-120	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05095	102	62-134	mg/L	
Tetrachloroethene	0.05000	0.05058	101	78-128	mg/L	
Toluene	0.05000	0.05094	102	77-127	mg/L	
1,1,1-Trichloroethane	0.05000	0.05294	106	73-130	mg/L	
1,1,2-Trichloroethane	0.05000	0.05094	102	78-127	mg/L	
Trichloroethene	0.05000	0.05073	101	79-126	mg/L	
Trichlorofluoromethane	0.05000	0.05028	101	71-137	mg/L	
Vinyl Chloride	0.05000	0.04691	94	64-129	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	99	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2112290 7 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② Preservatives Use Codes: 1,6 | 3 | 3 | 6 | 6

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	③ Analysis/Method Required: VOCs (624)	Total metals + Hardness (200.8)	Dissolved metals (200.8)	BOD	TSS
1	Effluent VSP-4	12/29/21	1230	WW	7	G	X	X	X	X	X

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	12/29/21	1315	
(2)			
(3)			
(4)			

④ Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 5.8°C

Custody Seal: Cooler content

Coolers: 1 Temp: 7.0-7.2°C

Shipping Carrier: TIE

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21122907

Client Name WSP USA - Herndon
Disposal Date 02/02/2022

Received By Thomas Wingate
Date Received 12/29/2021 01:15:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	7.2
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 12/29/2021

PM Review and Approval: Amber Confer Date: 12/29/2021

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122908

January 13, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21122908**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21122908**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 2, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21122908

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/29/2021 at 01:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21122908-001	Effluent VSP-4	WASTE WATER	12/29/21 12:30
21122908-002	TB-122921	WATER	12/29/21 11:35
21122908-002	TB-122921	WATER	12/29/21 11:35

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122908

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/29/2021 12:30** **PSS Sample ID: 21122908-001**
Matrix: WASTE WATER **Date/Time Received: 12/29/2021 13:15**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	01/11/22	01/11/22 20:52	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*97*	*%*	*80-120*		*1*	*01/11/22*	*01/11/22 20:52*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122908

Sample ID: TB-122921 **Date/Time Sampled: 12/29/2021 11:35** **PSS Sample ID: 21122908-002**
Matrix: WATER **Date/Time Received: 12/29/2021 13:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	01/07/22	01/07/22 11:58	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Acrylonitrile	ND	ug/L	5.0		1	01/07/22	01/07/22 11:58	1011
Chloromethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Vinyl Chloride	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Bromomethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Chloroethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Methylene Chloride	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Chloroform	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Benzene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Trichloroethene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Toluene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Tetrachloroethylene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Chlorobenzene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Ethylbenzene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
Bromoform	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/07/22	01/07/22 11:58	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21122908

Sample ID: TB-122921 **Date/Time Sampled: 12/29/2021 11:35** **PSS Sample ID: 21122908-002**
Matrix: WATER **Date/Time Received: 12/29/2021 13:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*107*	*%*	*87-120*	*1*	*01/07/22*	*01/07/22 11:58*	*1011*
4-Bromofluorobenzene	*103*	*%*	*85-147*	*1*	*01/07/22*	*01/07/22 11:58*	*1011*
Toluene-D8	*101*	*%*	*88-110*	*1*	*01/07/22*	*01/07/22 11:58*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	01/11/22	01/11/22 21:14	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*97*	*%*	*80-120*	*1*	*01/11/22*	*01/11/22 21:14*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21122908

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21122908

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-122921	Initial	21122908-002	W	89095	190600	01/07/2022 09:01	01/07/2022 11:58
	89095-1-BKS	BKS	89095-1-BKS	W	89095	190600	01/07/2022 09:01	01/07/2022 09:36
	89095-1-BLK	BLK	89095-1-BLK	W	89095	190600	01/07/2022 09:01	01/07/2022 11:14
	AZZ S	MS	22010515-001 S	W	89095	190600	01/07/2022 09:01	01/07/2022 16:56
	AZZ SD	MSD	22010515-001 S	W	89095	190600	01/07/2022 09:01	01/07/2022 17:19
SW-846 8260 B-Modified	Effluent VSP-4	Initial	21122908-001	W	89120	190665	01/11/2022 15:24	01/11/2022 20:52
	TB-122921	Initial	21122908-002	W	89120	190665	01/11/2022 15:24	01/11/2022 21:14
	89120-1-BKS	BKS	89120-1-BKS	W	89120	190665	01/11/2022 15:24	01/11/2022 19:24
	89120-1-BLK	BLK	89120-1-BLK	W	89120	190665	01/11/2022 15:24	01/11/2022 20:30
	89120-1-BSD	BSD	89120-1-BSD	W	89120	190665	01/11/2022 15:24	01/11/2022 19:46

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122908

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 190600
Matrix: Water
Date Prep: 01/07/22
MB Sample Id: 89095-1-BLK
LCS Sample Id: 89095-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	49.12	98	60-140	ug/L	
Acrylonitrile	<5.000	50.00	42.11	84	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	49.63	99	54-148	ug/L	
Chloromethane	<1.000	50.00	43.48	87	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	48.70	97	5-195	ug/L	
Bromomethane	<1.000	50.00	40.01	80	15-185	ug/L	
Chloroethane	<1.000	50.00	41.24	82	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	50.46	101	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	38.35	77	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.12	90	50-150	ug/L	
Methylene Chloride	<1.000	50.00	42.81	86	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.37	91	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.61	91	70-130	ug/L	
Chloroform	<1.000	50.00	46.09	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.35	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.25	99	70-130	ug/L	
Benzene	<1.000	50.00	43.74	87	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.68	97	70-130	ug/L	
Trichloroethene	<1.000	50.00	44.57	89	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	43.90	88	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.96	98	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.15	96	25-175	ug/L	
Toluene	<1.000	50.00	43.63	87	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.33	91	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.01	90	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	45.97	92	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	47.26	95	70-135	ug/L	
Chlorobenzene	<1.000	50.00	43.88	88	65-135	ug/L	
Ethylbenzene	<1.000	50.00	45.58	91	60-140	ug/L	
Bromoform	<1.000	50.00	45.18	90	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	41.63	83	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.16	88	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	43.84	88	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.28	89	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		104		87-120	%
4-Bromofluorobenzene	100		99		85-147	%
Toluene-D8	102		101		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122908

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 190665 Matrix: Water Date Prep: 01/11/22
MB Sample Id: 89120-1-BLK LCS Sample Id: 89120-1-BKS LCSD Sample Id: 89120-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	33.36	111	30.92	103	50-150	7	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	97		101		100		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122908

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21122908

Analytical Method: SW-846 8260 B-Modified
Seq Number: 190665 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 01/11/22 19:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	32.18	107	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 190665 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/11/22 18:40

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.79	99	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21122908 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31405450101/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes												Analysis/ Method Required: 1,4-dioxane (SIM)	VOCs (624)
							1	1												
1	Effluent VSP-4	12/29/21	1230	WW	3	G													X	
2	TB-122921	—	—	—	4	—													X	X

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	12/29/21	1315	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)

☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 5.8°C

Custody Seal: Cooler Intact

Coolers: 1 Temp: 11.1°-11.8°C

Shipping Carrier: FE

Special Instructions: Standard 10-day TAT

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21122908

Client Name WSP USA - Herndon
Disposal Date 02/02/2022

Received By Thomas Wingate
Date Received 12/29/2021 01:15:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	11.8
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	2
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

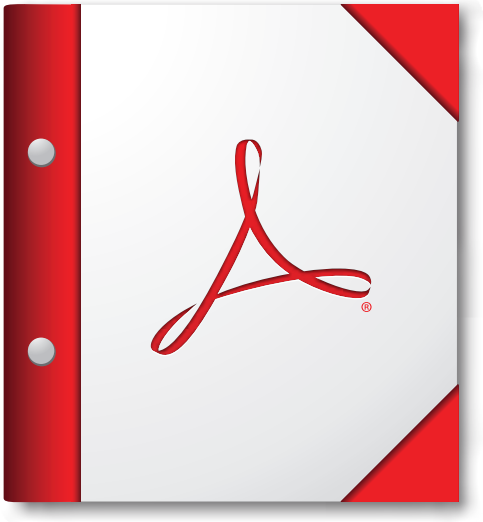
For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 12/29/2021

PM Review and Approval: Amber Confer Date: 12/29/2021

APPENDIX

B DISCHARGE REQUEST AND APPROVAL FOR RESIN CLEANING WATER (2021)



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VIA ELECTRONIC MAIL

November 1, 2021

Chris Tait
Regulatory Compliance Program Manager
Pre-treatment Program
Department of Public Works
2662 Riva Road WWD MS 7408
Annapolis, MD 21401

Subject: **Request for New Wastewater Discharge**
EMERSUB 16 LLC Treatment Building, Harmans Road, Hanover, Maryland
Wastewater Discharge Permit No. 210020

Dear Mr. Tait:

On behalf of EMERSUB 16, LLC (EMERSUB 16), WSP USA Inc. (WSP) has prepared this letter requesting approval from the Anne Arundel County (County) Pre-treatment Program for the discharge of new wastewater to the sanitary sewer system on Harmans Road in Hanover, Maryland. This wastewater was generated during a recently completed maintenance activity conducted on the groundwater remediation system (System) on the property and consists of neutralized caustic solution used to remove natural organic foulants that have accumulated to treatment resins and other post-cleaning water containing the foulants. The discharge request is being submitted in accordance with the requirement specified in *Section 12. New Wastewater and Pollutants Discharge Request* of Wastewater Discharge Permit No. 210020, issued to EMERSUB 16. Information on the maintenance activity that generated the wastewater, chemical characterization of the wastewater, and the proposed plan for discharging the water to the sewer system is provided below.

GROUNDWATER REMEDIATION SYSTEM – DESCRIPTION AND MAINTENANCE ACTIVITY

Under the Maryland Department of the Environment (MDE) Voluntary Cleanup Program, and as required under Administrative Order on Consent (RCRA-03-2016-0170 CA) issued by the United States Environmental Protection Agency Region III, EMERSUB 16 has operated the System to control the migration of chlorinated volatile organic compounds (VOCs) and 1,4-dioxane present in the aquifer underlying the former facility property. The System involves the extraction of affected groundwater using recovery wells and treatment of the extracted groundwater using bag filters for suspended solids removal, synthetic resin for the removal of VOCs and 1,4-dioxane, caustic soda for pH buffering, and an in-line aerator to increase dissolved oxygen levels. The treated groundwater is routed and discharged to the reach of Stony Run on the property. The treated water is discharged to Stony Run under Maryland State Discharge Permit Number 15-DP-3442 and National Pollutant Discharge Elimination System Permit MD0069094. The resin media

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13530 Dulles Technology Drive
Herndon, VA 20171

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wsp.com

regularly undergoes steam regeneration onsite to desorb the volatile organic compounds (VOCs) and 1,4-dioxane removed from the groundwater.

Natural organic constituents present at very low concentrations in the extracted groundwater continually accumulate and foul the synthetic resin media, thus reducing its treatment performance and requiring more frequent steam regenerations. WSP has identified cleaning of the resin using a heated caustic solution as a periodic maintenance procedure to remove the natural organic foulants and restore the treatment capacity of the resin. After completing the cleaning process, the used caustic solution is transferred to a small frac tank and neutralized with acid for subsequent management. Additionally, high pH water containing residual natural organic constituents that is produced during post-cleaning regenerations of the resin media is combined with the neutralized water in the frac tank. WSP completed the most recent resin cleaning event and post-cleaning regenerations between September 25 and October 1, 2021. The total volume of water generated during this maintenance activity, and which WSP now proposes to discharge to the Anne Arundel County sewer system pursuant to this request, was approximately 8,900 gallons.

CHEMICAL CHARACTERIZATION OF RESIN CLEANING WATER

On October 7, 2021, WSP collected a sample of the wastewater contained in the frac tank for chemical characterization purposes. The sample was analyzed for the following parameters by Phase Separation Science, Inc., of Baltimore, Maryland.

- Target Analyte List Metals (including mercury),
- Total cyanide
- Organochlorine pesticides,
- Polychlorinated biphenyls,
- VOCs,
- Semi-volatile organic compounds,
- Oil & grease,
- Total suspended solids,
- Biochemical oxygen demand (BOD),
- Chemical oxygen demand (COD),
- Flash point

The temperature and pH of the wastewater was measured using a calibrated field meter at the time of sample collection.

A copy of the certified laboratory analytical report, dated October 14, 2021, is provided in Enclosure A. The laboratory data indicates the contained water from the resin cleaning activities meets the standards, including total toxic organics, specified in *Part 2 – Applicable Effluent Limitations* of EMERSUB 16's wastewater discharge permit. As noted in the Special Instructions portion of the chain of custody (COC) form that accompanied the sample shipment to the laboratory, the temperature and pH of the water on the day of sampling were 22.8° Celsius and 8.09 standard units, respectively. (A copy of the COC form is included on page 38 of the analytical report.) These field data are also in compliance with the effluent limitations in the wastewater discharge permit.

The COD concentration of the sample – 850 milligrams per liter (mg/L) – exceeds the level of 250 mg/L listed in Footnote 3 of the wastewater discharge standards. Based on the information provided in this footnote, a surcharge would be applicable for this COD level as specified in the County sewer ordinances.

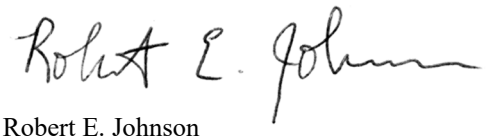
DISCHARGE TO SANITARY SEWER SYSTEM

Upon approval from the County Pre-treatment Program, WSP would coordinate with the System operation and maintenance contractor to discharge the contained wastewater to the sanitary sewer system via a drain located inside the treatment building. The wastewater would be discharged during normal business hours so that personnel can be onsite to monitor the process. It is anticipated the discharge of all water would occur over a 2 to 3-day period. Based on this schedule, the maximum daily volume of resin cleaning wastewater discharged to the sewer would be <4,500 gallons.

Once the wastewater is discharged, the frac tank will be cleaned and removed from the property. Water generated during the cleaning of the frac tank will be transported offsite for disposal and not be discharged to the sanitary sewer system.

If you have any questions or require additional information, please contact me at (703) 709-6500.

Kind regards,



Robert E. Johnson
Director of Geological Sciences – Earth & Environment

K:\Emerson\Kop-Flex_$ONSITE AREA\

Encl.

cc: Department of Public Works, Finance Division
Mr. Stephen Clarke, EMERSUB 16 LLC
Ms. Amber Crouch, EMERSUB 16 LLC

ENCLOSURE A – LABORATORY ANALYTICAL REPORT, RESIN CLEANING WATER

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

October 14, 2021

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **21100715**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21100715**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 11, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 21100715

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/07/2021 at 01:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
21100715-001	Resin Cleaning Water	WASTE WATER	10/07/21 12:10
21100715-002	TB-100721-RCW	WATER	10/07/21 13:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Oil and Grease — Analytical Method: EPA 1664 B O&G

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/L	2.2		1	10/08/21	10/08/21 13:00	1022

TAL Metals (w/o Hg) — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	**5,970**	ug/L	1,000		10	10/08/21	10/13/21 16:32	1064
Antimony	ND	ug/L	10		2	10/08/21	10/11/21 14:13	1064
Arsenic	**2.5**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Barium	**16.4**	ug/L	2.00		2	10/08/21	10/11/21 14:13	1064
Beryllium	**3.3**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Cadmium	ND	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Calcium	**2,540**	ug/L	1,000		10	10/08/21	10/13/21 16:32	1064
Chromium	**17.8**	ug/L	2.00		2	10/08/21	10/11/21 14:13	1064
Cobalt	**5.1**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Copper	**221**	ug/L	2.00		2	10/08/21	10/11/21 14:13	1064
Iron	**218**	ug/L	200		2	10/08/21	10/11/21 14:13	1064
Lead	**4.4**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Magnesium	**558**	ug/L	200		2	10/08/21	10/11/21 14:13	1064
Manganese	**7.5**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Nickel	**5.7**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Potassium	**27,600**	ug/L	1,000		10	10/08/21	10/13/21 16:32	1064
Selenium	**3.4**	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Silver	ND	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Sodium	**10,600,000**	ug/L	1,000,000		10000	10/08/21	10/14/21 14:05	1064
Thallium	ND	ug/L	2.0		2	10/08/21	10/11/21 14:13	1064
Vanadium	**12.1**	ug/L	2.00		2	10/08/21	10/11/21 14:13	1064
Zinc	**67.3**	ug/L	40.0		2	10/08/21	10/11/21 14:13	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Mercury, Total — Analytical Method: EPA 245.1

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Mercury	**0.7**	ug/L	0.2		10/13/21	10/13/21 14:15	4005

Organochlorine Pesticides — Analytical Method: EPA 608 .3 — Preparation Method: E608.3

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4,4-DDD	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
4,4-DDE	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
4,4-DDT	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Aldrin	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
alpha-BHC	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
alpha-Chlordane	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
beta-BHC	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Chlordane	ND	mg/L	0.0010		1	10/09/21	10/12/21 09:21	1029
delta-BHC	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Dieldrin	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Endosulfan I	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Endosulfan II	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Endosulfan sulfate	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Endrin	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Endrin aldehyde	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
gamma-BHC (Lindane)	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
gamma-Chlordane	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Heptachlor	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Heptachlor epoxide	ND	mg/L	0.000040		1	10/09/21	10/12/21 09:21	1029
Toxaphene	ND	mg/L	0.0010		1	10/09/21	10/12/21 09:21	1029

Surrogate(s)	***Recovery***		***Limits***				
Tetrachloro-m-xylene	*76*	*%*	*23-136*		*1*	*10/09/21*	*10/12/21 09:21*	*1029*
Decachlorobiphenyl	*111*	*%*	*60-139*		*1*	*10/09/21*	*10/12/21 09:21*	*1029*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Polychlorinated Biphenyls (PCBs) Analytical Method: EPA 608 .3 Preparation Method: E608.3
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029
PCB-1221	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029
PCB-1232	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029
PCB-1242	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029
PCB-1248	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029
PCB-1254	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029
PCB-1260	ND	mg/L	0.00050		1	10/09/21	10/11/21 10:01	1029

Surrogate(s)	*Recovery*		*Limits*			
Tetrachloro-m-xylene	*76*	*%*	*23-136*	*1*	*10/09/21*	*10/11/21 10:01*	*1029*
Decachlorobiphenyl	*94*	*%*	*60-139*	*1*	*10/09/21*	*10/11/21 10:01*	*1029*

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	mg/L	0.0050		1	10/08/21	10/08/21 12:04	1011
Acrylonitrile	ND	mg/L	0.0050		1	10/08/21	10/08/21 12:04	1011
Dichlorodifluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Chloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Vinyl Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Bromomethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Chloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Trichlorofluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
2-Chloroethyl Vinyl Ether	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,1-Dichloroethene	**0.0025**	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Methylene Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
trans-1,2-dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,1-Dichloroethane	**0.0012**	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Chloroform	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,1,1-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Carbon Tetrachloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Benzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Trichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,2-Dichloropropane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011

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Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
cis-1,3-Dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Toluene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
trans-1,3-dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,1,2-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Tetrachloroethylene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Dibromochloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Chlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Ethylbenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
Bromoform	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,3-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,4-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011
1,2-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:04	1011

Surrogate(s)	***Recovery***		***Limits***					
Dibromofluoromethane	*106*	*%*	*87-120*		*1*	*10/08/21*	*10/08/21 12:04*	*1011*
4-Bromofluorobenzene	*84*	*%*	*85-147*	*	*1*	*10/08/21*	*10/08/21 12:04*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*10/08/21*	*10/08/21 12:04*	*1011*

Extractable Priority Pollutants Analytical Method: EPA 625 .1 Preparation Method: E625.1

Qualifier(s): See Batch 188373 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,2,4-Trichlorobenzene	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
1,2-Diphenylhydrazine	ND	mg/L	0.0050		1	10/11/21	10/11/21 17:35	1059
2,4,6-Trichlorophenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
2,4-Dichlorophenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
2,4-Dimethylphenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
2,4-Dinitrophenol	ND	mg/L	0.0050		1	10/11/21	10/11/21 17:35	1059
2,4-Dinitrotoluene	ND	mg/L	0.0020		1	10/11/21	10/11/21 17:35	1059
2,6-Dinitrotoluene	ND	mg/L	0.0020		1	10/11/21	10/11/21 17:35	1059
2-Chloronaphthalene	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
2-Chlorophenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
2-Nitrophenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
3,3-Dichlorobenzidine	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Extractable Priority Pollutants Analytical Method: EPA 625 .1 Preparation Method: E625.1

Qualifier(s): See Batch 188373 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	mg/L	0.0050		1	10/11/21	10/11/21 17:35	1059
4-Bromophenylphenyl ether	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
4-Chloro-3-methyl phenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
4-Chlorophenyl Phenyl ether	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
4-Nitrophenol	ND	mg/L	0.0050		1	10/11/21	10/11/21 17:35	1059
Acenaphthene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Acenaphthylene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Anthracene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Benzidine	ND	mg/L	0.0050		1	10/11/21	10/11/21 17:35	1059
Benzo(a)anthracene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Benzo(a)pyrene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Benzo(b)fluoranthene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Benzo(g,h,i)perylene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Benzo(k)fluoranthene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Butyl benzyl phthalate	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
bis(2-chloroethoxy) methane	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
bis(2-chloroethyl) ether	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
bis(2-chloroisopropyl) ether	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
bis(2-ethylhexyl) phthalate	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Chrysene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Dibenz(a,h)Anthracene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Diethyl phthalate	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Dimethyl phthalate	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Di-n-butyl phthalate	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Di-n-octyl phthalate	ND	mg/L	0.0020		1	10/11/21	10/11/21 17:35	1059
Fluoranthene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Fluorene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Hexachlorobenzene	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Hexachlorobutadiene	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Hexachlorocyclopentadiene	ND	mg/L	0.0020		1	10/11/21	10/11/21 17:35	1059
Hexachloroethane	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Indeno(1,2,3-c,d)Pyrene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Isophorone	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Naphthalene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Nitrobenzene	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Extractable Priority Pollutants — Analytical Method: EPA 625 .1 — Preparation Method: E625.1

Qualifier(s): See Batch 188373 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
N-Nitrosodimethylamine	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
N-Nitrosodi-n-propyl amine	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
N-Nitrosodiphenylamine	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Pentachlorophenol	ND	mg/L	0.0020		1	10/11/21	10/11/21 17:35	1059
Phenanthrene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059
Phenol	ND	mg/L	0.0010		1	10/11/21	10/11/21 17:35	1059
Pyrene	ND	mg/L	0.00025		1	10/11/21	10/11/21 17:35	1059

Surrogate(s)	*Recovery*		*Limits*			
2-Fluorobiphenyl	*69*	*%*	*42-141*	*1*	*10/11/21*	*10/11/21 17:35*	*1059*
2-Fluorophenol	*64*	*%*	*35-131*	*1*	*10/11/21*	*10/11/21 17:35*	*1059*
Nitrobenzene-d5	*71*	*%*	*40-139*	*1*	*10/11/21*	*10/11/21 17:35*	*1059*
2,4,6-Tribromophenol	*79*	*%*	*35-156*	*1*	*10/11/21*	*10/11/21 17:35*	*1059*
Phenol-d6	*70*	*%*	*33-140*	*1*	*10/11/21*	*10/11/21 17:35*	*1059*
Terphenyl-D14	*88*	*%*	*54-138*	*1*	*10/11/21*	*10/11/21 17:35*	*1059*

Total Suspended Solids — Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	**28**	mg/L	6.1		1	10/07/21	10/07/21 14:30	1034

Total Cyanide — Analytical Method: SM 4500-CN C,E -2011 — Preparation Method: SM4500CN-C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	ND	mg/L	0.010		1	10/12/21	10/12/21 15:05	1053

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: Resin Cleaning Water **Date/Time Sampled: 10/07/2021 12:10** **PSS Sample ID: 21100715-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2021 13:20**

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 07-Oct-21 17:10

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	**46.8**	mg/L	20.0		10/12/21	10/12/21 16:00	4005

Chemical Oxygen Demand — Analytical Method: SM 5220D -2011

Qualifier(s): See Batch 188393 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chemical Oxygen Demand	**850**	mg/L	200		10	10/12/21	10/12/21 16:22	1053

Flash Point — Analytical Method: SW-846 1020 A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Flash Point	**> 200**	Deg F	70.0		1	10/07/21	10/07/21 14:45	1022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: TB-100721-RCW **Date/Time Sampled: 10/07/2021 13:20** **PSS Sample ID: 21100715-002**
Matrix: WATER **Date/Time Received: 10/07/2021 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	mg/L	0.0050		1	10/08/21	10/08/21 12:49	1011
Acrylonitrile	ND	mg/L	0.0050		1	10/08/21	10/08/21 12:49	1011
Dichlorodifluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Chloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Vinyl Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Bromomethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Chloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Trichlorofluoromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
2-Chloroethyl Vinyl Ether	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,1-Dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Methylene Chloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
trans-1,2-dichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,1-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Chloroform	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,1,1-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Carbon Tetrachloride	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Benzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Trichloroethene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,2-Dichloropropane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Bromodichloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
cis-1,3-Dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Toluene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
trans-1,3-dichloropropene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,1,2-Trichloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Tetrachloroethylene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Dibromochloromethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Chlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Ethylbenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
Bromoform	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,3-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,4-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011
1,2-Dichlorobenzene	ND	mg/L	0.0010		1	10/08/21	10/08/21 12:49	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 21100715

Sample ID: TB-100721-RCW **Date/Time Sampled: 10/07/2021 13:20** **PSS Sample ID: 21100715-002**
Matrix: WATER **Date/Time Received: 10/07/2021 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	Recovery		Limits				
Dibromofluoromethane	*107*	*%*	*87-120*	*1*	*10/08/21*	*10/08/21 12:49*	*1011*
4-Bromofluorobenzene	*86*	*%*	*85-147*	*1*	*10/08/21*	*10/08/21 12:49*	*1011*
Toluene-D8	*100*	*%*	*88-110*	*1*	*10/08/21*	*10/08/21 12:49*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 21100715

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Preservative not indicated on COC for metals, cyanide, COD, oil and grease, and VOC. Received containers preserved with HNO3, NaOH, H2SO4, and a 624 kit with two unpreserved vials and one preserved iwh HCl.

21100715: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Total Metals

Batch: 188363

Sample 001 was run at 2x dilution due to sample matrix interference on internal standards.

Method exceedance: Continuing Calibration Verification (CCV) #2 falls outside of acceptance limits (85% - 115%) for iron at 126% recovery. See QC summary form.

Analytical:

Extractable Priority Pollutants

Batch: 188373

Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified; see QC summary.

Analytical:

Chemical Oxygen Demand

Batch: 188393

Relative Percent Difference (RPD) for matrix spike/matrix spike duplicate (MS/MSD) exceedance identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

EPA 245.1, SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21100715

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 1664 B O&G	Resin Cleaning Water	Initial	21100715-001	W	188293	188293	10/08/2021 13:00	10/08/2021 13:00
	188293-1-BKS	BKS	188293-1-BKS	W	188293	188293	10/08/2021 13:00	10/08/2021 13:00
	188293-1-BLK	BLK	188293-1-BLK	W	188293	188293	10/08/2021 13:00	10/08/2021 13:00
	188293-1-BSD	BSD	188293-1-BSD	W	188293	188293	10/08/2021 13:00	10/08/2021 13:00
	MP401 S	MS	21100731-002 S	W	188293	188293	10/08/2021 13:00	10/08/2021 13:00
EPA 200.8	87988-1-BKS	BKS	87988-1-BKS	W	87988	188329	10/08/2021 08:29	10/08/2021 15:23
	87988-1-BLK	BLK	87988-1-BLK	W	87988	188329	10/08/2021 08:29	10/08/2021 15:19
	King St 100421 S	MS	21100603-001 S	W	87988	188329	10/08/2021 08:29	10/08/2021 15:33
	RW-08-10072021 S	MS	21100722-008 S	W	87988	188329	10/08/2021 08:29	10/08/2021 17:40
	King St 100421 SD	MSD	21100603-001 S	W	87988	188329	10/08/2021 08:29	10/08/2021 15:37
	87988-1-BKS	Reanalysis	87988-1-BKS	W	87988	188363	10/08/2021 08:29	10/11/2021 13:45
	87988-1-BLK	Reanalysis	87988-1-BLK	W	87988	188363	10/08/2021 08:29	10/11/2021 13:40
	Resin Cleaning Water	Reanalysis	21100715-001	W	87988	188363	10/08/2021 08:29	10/11/2021 14:13
	Resin Cleaning Water	Reanalysis	21100715-001	W	87988	188445	10/08/2021 08:29	10/13/2021 16:32
	Resin Cleaning Water	Reanalysis	21100715-001	W	87988	188453	10/08/2021 08:29	10/14/2021 14:05
EPA 245.1	Resin Cleaning Water	Initial	21100715-001	W	188434	188434	10/13/2021 14:15	10/13/2021 14:15
EPA 608 .3	Resin Cleaning Water	Initial	21100715-001	W	87999	188387	10/09/2021 11:43	10/11/2021 10:01
	87999-1-BKS	BKS	87999-1-BKS	W	87999	188387	10/09/2021 11:43	10/11/2021 09:05
	87999-1-BLK	BLK	87999-1-BLK	W	87999	188387	10/09/2021 11:43	10/11/2021 08:36
	87999-1-BSD	BSD	87999-1-BSD	W	87999	188387	10/09/2021 11:43	10/11/2021 09:33
EPA 608 .3	Resin Cleaning Water	Initial	21100715-001	W	87998	188389	10/09/2021 11:43	10/12/2021 09:21
	87998-1-BKS	BKS	87998-1-BKS	W	87998	188389	10/09/2021 11:43	10/12/2021 08:52
	87998-1-BLK	BLK	87998-1-BLK	W	87998	188389	10/09/2021 11:43	10/12/2021 08:37
	87998-1-BSD	BSD	87998-1-BSD	W	87998	188389	10/09/2021 11:43	10/12/2021 09:06
EPA 624 .1	Resin Cleaning Water	Initial	21100715-001	W	88004	188319	10/08/2021 08:34	10/08/2021 12:04
	TB-100721-RCW	Initial	21100715-002	W	88004	188319	10/08/2021 08:34	10/08/2021 12:49
	88004-1-BKS	BKS	88004-1-BKS	W	88004	188319	10/08/2021 08:34	10/08/2021 09:40
	88004-1-BLK	BLK	88004-1-BLK	W	88004	188319	10/08/2021 08:34	10/08/2021 11:19
	King St 100421 S	MS	21100603-001 S	W	88004	188319	10/08/2021 08:34	10/08/2021 14:43
	King St 100421 SD	MSD	21100603-001 S	W	88004	188319	10/08/2021 08:34	10/08/2021 15:06
EPA 625 .1	Resin Cleaning Water	Initial	21100715-001	W	88010	188373	10/11/2021 10:19	10/11/2021 17:35
	88010-1-BKS	BKS	88010-1-BKS	W	88010	188373	10/11/2021 10:19	10/11/2021 15:48
	88010-1-BLK	BLK	88010-1-BLK	W	88010	188373	10/11/2021 10:19	10/11/2021 14:55
	88010-1-BSD	BSD	88010-1-BSD	W	88010	188373	10/11/2021 10:19	10/11/2021 16:15
SM 2540D -2011	Resin Cleaning Water	Initial	21100715-001	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
	188272-1-BKS	BKS	188272-1-BKS	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
	188272-1-BLK	BLK	188272-1-BLK	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
	801 Monthly D	MD	21100704-001 D	W	188272	188272	10/07/2021 14:30	10/07/2021 14:30
SM 4500-CN C,E -2011	Resin Cleaning Water	Initial	21100715-001	W	88030	188380	10/12/2021 12:14	10/12/2021 15:05
	88030-1-BKS	BKS	88030-1-BKS	W	88030	188380	10/12/2021 13:02	10/12/2021 14:51
	88030-1-BLK	BLK	88030-1-BLK	W	88030	188380	10/12/2021 13:02	10/12/2021 14:49
	88030-1-BSD	BSD	88030-1-BSD	W	88030	188380	10/12/2021 12:14	10/12/2021 14:53

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 21100715

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM 4500-CN C,E -2011	20211006g1&g2 S	MS	21100709-001 S	W	88030	188380	10/12/2021 12:14	10/12/2021 15:01
	20211006g1&g2 SD	MSD	21100709-001 S	W	88030	188380	10/12/2021 12:14	10/12/2021 15:03
SM 5210B -2011	Resin Cleaning Water	Initial	21100715-001	W	188433	188433	10/12/2021 16:00	10/12/2021 16:00
SM 5220D -2011	Resin Cleaning Water	Initial	21100715-001	W	188393	188393	10/12/2021 16:22	10/12/2021 16:22
	188393-1-BKS	BKS	188393-1-BKS	W	188393	188393	10/12/2021 16:22	10/12/2021 16:22
	188393-1-BLK	BLK	188393-1-BLK	W	188393	188393	10/12/2021 16:22	10/12/2021 16:22
	Resin Cleaning Water S	MS	21100715-001 S	W	188393	188393	10/12/2021 16:22	10/12/2021 16:22
	Resin Cleaning Water SD	MSD	21100715-001 S	W	188393	188393	10/12/2021 16:22	10/12/2021 16:22
SW-846 1020 A	Resin Cleaning Water	Initial	21100715-001	W	188275	188275	10/07/2021 14:45	10/07/2021 14:45
	188275-1-BKS	BKS	188275-1-BKS	W	188275	188275	10/07/2021 14:39	10/07/2021 14:39
	Resin Cleaning Water D	MD	21100715-001 D	W	188275	188275	10/07/2021 14:45	10/07/2021 14:45

Analytical Method: EPA 1664 B O&G

Seq Number: 188293 Matrix: Water
MB Sample Id: 188293-1-BLK LCS Sample Id: 188293-1-BKS LCSD Sample Id: 188293-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Oil & Grease, Total Recovered	<2.000	40.00	38.50	96	38.60	97	78-114	1	11	mg/L	

Analytical Method: SM 2540D -2011

Seq Number: 188272 Matrix: Water
MB Sample Id: 188272-1-BLK LCS Sample Id: 188272-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	110	105.6	96	80-120	mg/L	

Analytical Method: SM 4500-CN C,E -2011 Prep Method: SM4500CN-CPRE

Seq Number: 188380 Matrix: Water Date Prep: 10/12/21
MB Sample Id: 88030-1-BLK LCS Sample Id: 88030-1-BKS LCSD Sample Id: 88030-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.01000	0.1000	0.09558	96	0.09383	94	85-115	2	20	mg/L	

Analytical Method: SM 5220D -2011

Seq Number: 188393 Matrix: Water
MB Sample Id: 188393-1-BLK LCS Sample Id: 188393-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Chemical Oxygen Demand	<20.00	483.5	514.4	106	80-120	mg/L	

Analytical Method: SM 5220D -2011

Seq Number: 188393 Matrix: Waste Water
Parent Sample Id: 21100715-001 MS Sample Id: 21100715-001 S MSD Sample Id: 21100715-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Chemical Oxygen Demand	852	483.5	1381	109	1273	87	83-149	22	20	mg/L	F

Analytical Method: SW-846 1020 A

Seq Number: 188275 Matrix: Waste Water
Parent Sample Id: 21100715-001 MD Sample Id: 21100715-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Flag
Flash Point	205	205	0	25	Deg F	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 188329 Matrix: Water Date Prep: 10/08/21
MB Sample Id: 87988-1-BLK LCS Sample Id: 87988-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Aluminum	<100	200	201.8	101	85-115	ug/L	
Antimony	<5.000	40.00	40.12	100	85-115	ug/L	
Arsenic	<1.000	40.00	39.71	99	85-115	ug/L	
Barium	<1.000	40.00	38.85	97	85-115	ug/L	
Beryllium	<1.000	40.00	42.77	107	85-115	ug/L	
Cadmium	<1.000	40.00	40.32	101	85-115	ug/L	
Chromium	<1.000	40.00	40.42	101	85-115	ug/L	
Cobalt	<1.000	40.00	40.75	102	85-115	ug/L	
Copper	<1.000	40.00	40.66	102	85-115	ug/L	
Lead	<1.000	40.00	38.69	97	85-115	ug/L	
Magnesium	<100	400	399.9	100	85-115	ug/L	
Manganese	<1.000	40.00	41.22	103	85-115	ug/L	
Nickel	<1.000	40.00	39.60	99	85-115	ug/L	
Potassium	<100	400	391.4	98	85-115	ug/L	
Selenium	<1.000	40.00	37.70	94	85-115	ug/L	
Silver	<1.000	40.00	41.38	103	85-115	ug/L	
Sodium	<100	400	422.5	106	85-115	ug/L	
Thallium	<1.000	40.00	40.44	101	85-115	ug/L	
Vanadium	<1.000	40.00	40.08	100	85-115	ug/L	
Zinc	<20.00	200	202.6	101	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 188363 Matrix: Water Date Prep: 10/08/21
MB Sample Id: 87988-1-BLK LCS Sample Id: 87988-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Calcium	<100	400	448.5	112	85-115	ug/L	
Iron	<100	400	456	114	85-115	ug/L	

Analytical Method: EPA 608 .3 Prep Method: E608P
Seq Number: 188387 Matrix: Water Date Prep: 10/09/21
MB Sample Id: 87999-1-BLK LCS Sample Id: 87999-1-BKS LCSD Sample Id: 87999-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
PCB-1016	<0.0005	0.005000	0.004692	94	0.004783	96	50-140	2	20	mg/L	
PCB-1260	<0.0005	0.005000	0.005338	107	0.005404	108	8-140	1	20	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Decachlorobiphenyl	68		98		98		60-139	%
Tetrachloro-m-xylene	91		100		102		23-136	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 608 .3 Prep Method: E608P
Seq Number: 188389 Matrix: Water Date Prep: 10/09/21
MB Sample Id: 87998-1-BLK LCS Sample Id: 87998-1-BKS LCSD Sample Id: 87998-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
4,4-DDD	<0.00004	0.0002	0.0002043	102	0.000201	101	31-141	1	20	mg/L	
4,4-DDE	<0.00004	0.0002	0.0002156	108	0.0002121	106	30-145	2	20	mg/L	
4,4-DDT	<0.00004	0.0002	0.0002311	116	0.0002274	114	25-160	2	20	mg/L	
Aldrin	<0.00004	0.0002	0.000201	101	0.000196	98	42-140	3	20	mg/L	
alpha-BHC	<0.00004	0.0002	0.0002055	103	0.0002012	101	37-140	2	20	mg/L	
alpha-Chlordane	<0.00004	0.0002	0.000197	99	0.0001916	96	45-140	3	20	mg/L	
beta-BHC	<0.00004	0.0002	0.0001957	98	0.0001926	96	17-147	2	20	mg/L	
delta-BHC	<0.00004	0.0002	0.0002139	107	0.0002083	104	19-140	3	20	mg/L	
Dieldrin	<0.00004	0.0002	0.0002146	107	0.0002104	105	36-146	2	20	mg/L	
Endosulfan I	<0.00004	0.0002	0.0002102	105	0.0002054	103	45-153	2	20	mg/L	
Endosulfan II	<0.00004	0.0002	0.0002139	107	0.0002124	106	1-202	1	20	mg/L	
Endosulfan sulfate	<0.00004	0.0002	0.0002121	106	0.0002092	105	26-144	1	20	mg/L	
Endrin	<0.00004	0.0002	0.0002198	110	0.0002166	108	30-147	2	20	mg/L	
Endrin aldehyde	<0.00004	0.0002	0.0002009	100	0.0001967	98	62-140	2	20	mg/L	
gamma-BHC (Lindane)	<0.00004	0.0002	0.0002063	103	0.0002024	101	32-140	2	20	mg/L	
gamma-Chlordane	<0.00004	0.0002	0.0001996	100	0.0001948	97	45-140	3	20	mg/L	
Heptachlor	<0.00004	0.0002	0.0002157	108	0.0002035	102	34-140	6	20	mg/L	
Heptachlor epoxide	<0.00004	0.0002	0.0002084	104	0.0002045	102	37-142	2	20	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Decachlorobiphenyl	102		85		86		60-139	%
Tetrachloro-m-xylene	89		98		93		23-136	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 625 .1 Prep Method: E625P
Seq Number: 188373 Matrix: Water Date Prep: 10/11/21
MB Sample Id: 88010-1-BLK LCS Sample Id: 88010-1-BKS LCSD Sample Id: 88010-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,2,4-Trichlorobenzene	<0.001000	0.04000	0.03324	83	0.03211	80	57-130	4	20	mg/L	
1,2-Diphenylhydrazine	<0.005000	0.04000	0.04634	116	0.04583	115	67-122	1	20	mg/L	
2,4,6-Trichlorophenol	<0.001000	0.04000	0.03637	91	0.03526	88	61-122	3	20	mg/L	
2,4-Dichlorophenol	<0.001000	0.04000	0.03422	86	0.03357	84	53-122	2	20	mg/L	
2,4-Dimethylphenol	<0.001000	0.04000	0.03335	83	0.03235	81	42-120	2	20	mg/L	
2,4-Dinitrophenol	<0.005000	0.04000	0.02881	72	0.03098	77	1-173	7	20	mg/L	
2,4-Dinitrotoluene	<0.002000	0.04000	0.03306	83	0.03280	82	48-127	1	20	mg/L	
2,6-Dinitrotoluene	<0.002000	0.04000	0.03043	76	0.02934	73	68-137	4	20	mg/L	
2-Chloronaphthalene	<0.001000	0.04000	0.03772	94	0.03682	92	65-120	2	20	mg/L	
2-Chlorophenol	<0.001000	0.04000	0.03553	89	0.03436	86	36-120	3	20	mg/L	
2-Nitrophenol	<0.001000	0.04000	0.03055	76	0.02968	74	45-167	3	20	mg/L	
3,3-Dichlorobenzidine	<0.001000	0.04000	0.04524	113	0.04677	117	8-213	3	20	mg/L	
4,6-Dinitro-2-methyl phenol	<0.005000	0.04000	0.03803	95	0.03953	99	53-130	4	20	mg/L	
4-Bromophenylphenyl ether	<0.001000	0.04000	0.03773	94	0.03693	92	65-120	2	20	mg/L	
4-Chloro-3-methyl phenol	<0.001000	0.04000	0.04473	112	0.04311	108	41-128	4	20	mg/L	
4-Chlorophenyl Phenyl ether	<0.001000	0.04000	0.04397	110	0.04173	104	38-145	6	20	mg/L	
4-Nitrophenol	<0.005000	0.04000	0.04955	124	0.04789	120	13-129	3	20	mg/L	
Acenaphthene	<0.00025	0.04000	0.03711	93	0.03625	91	60-132	2	20	mg/L	
Acenaphthylene	<0.00025	0.04000	0.03573	89	0.03472	87	54-126	2	20	mg/L	
Anthracene	<0.00025	0.04000	0.03661	92	0.03582	90	43-120	2	20	mg/L	
Benzidine	<0.005000	0.04000	0.03072	77	0.03370	84	15-183	9	20	mg/L	
Benzo(a)anthracene	<0.00025	0.04000	0.03538	88	0.03651	91	42-133	3	20	mg/L	
Benzo(a)pyrene	<0.00025	0.04000	0.04149	104	0.04115	103	32-148	1	20	mg/L	
Benzo(b)fluoranthene	<0.00025	0.04000	0.04839	121	0.04553	114	42-140	6	20	mg/L	
Benzo(g,h,i)perylene	<0.00025	0.04000	0.03877	97	0.03898	97	1-195	0	20	mg/L	
Benzo(k)fluoranthene	<0.00025	0.04000	0.03529	88	0.03878	97	25-146	10	20	mg/L	
Butyl benzyl phthalate	<0.001000	0.04000	0.03972	99	0.04081	102	1-140	3	20	mg/L	
bis(2-chloroethoxy) methane	<0.001000	0.04000	0.02865	72	0.02757	69	49-165	4	20	mg/L	
bis(2-chloroethyl) ether	<0.001000	0.04000	0.03273	82	0.03150	79	43-126	4	20	mg/L	
bis(2-chloroisopropyl) ether	<0.001000	0.04000	0.02934	73	0.02822	71	63-139	3	20	mg/L	
bis(2-ethylhexyl) phthalate	<0.001000	0.04000	0.03929	98	0.04060	102	29-137	4	20	mg/L	
Chrysene	<0.00025	0.04000	0.04272	107	0.04331	108	44-140	1	20	mg/L	
Dibenz(a,h)Anthracene	<0.00025	0.04000	0.04162	104	0.04169	104	1-200	0	20	mg/L	
Diethyl phthalate	<0.001000	0.04000	0.05015	125	0.04863	122	1-120	2	20	mg/L	H
Dimethyl phthalate	<0.001000	0.04000	0.03930	98	0.03862	97	1-120	1	20	mg/L	
Di-n-butyl phthalate	<0.001000	0.04000	0.04346	109	0.04313	108	8-120	1	20	mg/L	
Di-n-octyl phthalate	<0.002000	0.04000	0.04794	120	0.04802	120	19-132	0	20	mg/L	
Fluoranthene	<0.00025	0.04000	0.03927	98	0.03949	99	43-121	1	20	mg/L	
Fluorene	<0.00025	0.04000	0.03876	97	0.03740	94	70-120	3	20	mg/L	
Hexachlorobenzene	<0.001000	0.04000	0.04626	116	0.04642	116	8-142	0	20	mg/L	
Hexachlorobutadiene	<0.001000	0.04000	0.03944	99	0.03695	92	38-120	7	20	mg/L	
Hexachlorocyclopentadiene	<0.002000	0.04000	0.03342	84	0.03216	80	40-127	5	20	mg/L	
Hexachloroethane	<0.001000	0.04000	0.03853	96	0.03641	91	55-120	5	20	mg/L	
Indeno(1,2,3-c,d)Pyrene	<0.00025	0.04000	0.03912	98	0.03875	97	1-151	1	20	mg/L	
Isophorone	<0.001000	0.04000	0.02791	70	0.02743	69	47-180	1	20	mg/L	
Naphthalene	<0.00025	0.04000	0.03360	84	0.03237	81	36-120	4	20	mg/L	
Nitrobenzene	<0.001000	0.04000	0.03097	77	0.03017	75	54-158	3	20	mg/L	
N-Nitrosodimethylamine	<0.001000	0.04000	0.02601	65	0.02470	62	45-120	5	20	mg/L	
N-Nitrosodi-n-propyl amine	<0.001000	0.04000	0.03250	81	0.03173	79	14-198	3	20	mg/L	
N-Nitrosodiphenylamine	<0.001000	0.04000	0.04040	101	0.03921	98	69-115	3	20	mg/L	
Pentachlorophenol	<0.002000	0.04000	0.03674	92	0.03712	93	38-152	1	20	mg/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 625 .1 Prep Method: E625P
Seq Number: 188373 Matrix: Water Date Prep: 10/11/21
MB Sample Id: 88010-1-BLK LCS Sample Id: 88010-1-BKS LCSD Sample Id: 88010-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Phenanthrene	<0.00025	0.04000	0.04665	117	0.04670	117	65-120	0	20	mg/L	
Phenol	<0.001000	0.04000	0.03233	81	0.03187	80	17-120	1	20	mg/L	
Pyrene	<0.00025	0.04000	0.03937	98	0.04100	103	70-120	5	20	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	70		80		77		42-141	%
2-Fluorophenol	69		63		61		35-131	%
Nitrobenzene-d5	73		78		75		40-139	%
2,4,6-Tribromophenol	80		87		85		35-156	%
Phenol-d6	72		79		79		33-140	%
Terphenyl-D14	94		84		85		54-138	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 188319
Matrix: Water
Date Prep: 10/08/21
MB Sample Id: 88004-1-BLK
LCS Sample Id: 88004-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	0.05000	0.04927	99	60-140	mg/L	
Acrylonitrile	<0.005000	0.05000	0.04480	90	60-140	mg/L	
Dichlorodifluoromethane	<0.001000	0.05000	0.03978	80	54-148	mg/L	
Chloromethane	<0.001000	0.05000	0.03400	68	1-205	mg/L	
Vinyl Chloride	<0.001000	0.05000	0.04017	80	5-195	mg/L	
Bromomethane	<0.001000	0.05000	0.04625	93	15-185	mg/L	
Chloroethane	<0.001000	0.05000	0.04513	90	40-160	mg/L	
Trichlorofluoromethane	<0.001000	0.05000	0.05400	108	50-150	mg/L	
2-Chloroethyl Vinyl Ether	<0.001000	0.05000	0.03649	73	1-225	mg/L	
1,1-Dichloroethene	<0.001000	0.05000	0.05259	105	50-150	mg/L	
Methylene Chloride	<0.001000	0.05000	0.05117	102	60-140	mg/L	
trans-1,2-dichloroethene	<0.001000	0.05000	0.05249	105	70-130	mg/L	
1,1-Dichloroethane	<0.001000	0.05000	0.04495	90	70-130	mg/L	
Chloroform	<0.001000	0.05000	0.05157	103	70-135	mg/L	
1,1,1-Trichloroethane	<0.001000	0.05000	0.05255	105	70-130	mg/L	
Carbon Tetrachloride	<0.001000	0.05000	0.05808	116	70-130	mg/L	
Benzene	<0.001000	0.05000	0.05123	102	65-135	mg/L	
1,2-Dichloroethane	<0.001000	0.05000	0.04612	92	70-130	mg/L	
Trichloroethene	<0.001000	0.05000	0.05450	109	65-135	mg/L	
1,2-Dichloropropane	<0.001000	0.05000	0.04643	93	35-165	mg/L	
Bromodichloromethane	<0.001000	0.05000	0.05335	107	65-135	mg/L	
cis-1,3-Dichloropropene	<0.001000	0.05000	0.04819	96	25-175	mg/L	
Toluene	<0.001000	0.05000	0.05254	105	70-130	mg/L	
trans-1,3-dichloropropene	<0.001000	0.05000	0.04819	96	50-150	mg/L	
1,1,2-Trichloroethane	<0.001000	0.05000	0.05299	106	70-130	mg/L	
Tetrachloroethylene	<0.001000	0.05000	0.06337	127	70-130	mg/L	
Dibromochloromethane	<0.001000	0.05000	0.05863	117	70-135	mg/L	
Chlorobenzene	<0.001000	0.05000	0.05125	103	65-135	mg/L	
Ethylbenzene	<0.001000	0.05000	0.04956	99	60-140	mg/L	
Bromoform	<0.001000	0.05000	0.06093	122	70-130	mg/L	
1,1,2,2-Tetrachloroethane	<0.001000	0.05000	0.04504	90	60-140	mg/L	
1,3-Dichlorobenzene	<0.001000	0.05000	0.05076	102	70-130	mg/L	
1,4-Dichlorobenzene	<0.001000	0.05000	0.04927	99	65-135	mg/L	
1,2-Dichlorobenzene	<0.001000	0.05000	0.05185	104	65-135	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		105		87-120	%
4-Bromofluorobenzene	85		82	*	85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: SM 4500-CN C,E -2011
Seq Number: 188380 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/12/21 15:15

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	95.65	96	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2011
Seq Number: 188379 Matrix: Water
Parent Sample Id: ICV ICV Sample Id: ICV Analyzed Date: 10/12/21 14:45

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Cyanide, Total	100	93.34	93	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2011
Seq Number: 188380 Matrix: Water
Parent Sample Id: MRL MRL Sample Id: MRL Analyzed Date: 10/12/21 14:55

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Cyanide, Total	10.00	9.686	97	50-150	ug/L	

Analytical Method: SM 5220D -2011
Seq Number: 188393 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/12/21 16:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Chemical Oxygen Demand	483.5	516.7	107	90-110	mg/L	

Analytical Method: SM 5220D -2011
Seq Number: 188393 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 10/12/21 16:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Chemical Oxygen Demand	483.5	515.9	107	90-110	mg/L	

Analytical Method: SM 5220D -2011
Seq Number: 175113 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/10/19 14:24

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Chemical Oxygen Demand	1004	1039	103	85-115	mg/L	

Analytical Method: SM 5220D -2011

Seq Number: 188393 Matrix: Water
Parent Sample Id: MRL-01 MRL Sample Id: MRL-01 Analyzed Date: 10/12/21 16:22

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Chemical Oxygen Demand	20.00	19.20	96	50-150	mg/L	

Analytical Method: EPA 200.8

Seq Number: 188329 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 10/08/21 14:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	205	103	85-115	ug/L	
Calcium	400	457.5	114	85-115	ug/L	
Potassium	400	407.2	102	85-115	ug/L	
Sodium	400	397.5	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188329 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 10/08/21 15:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	200.1	100	85-115	ug/L	
Calcium	400	451.3	113	85-115	ug/L	
Potassium	400	393.4	98	85-115	ug/L	
Sodium	400	407.4	102	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188329 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 10/08/21 16:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	228.7	114	85-115	ug/L	
Calcium	400	453.4	113	85-115	ug/L	
Potassium	400	476.9	119	85-115	ug/L	X
Sodium	400	816.1	204	85-115	ug/L	X

Analytical Method: EPA 200.8
Seq Number: 188329 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 10/08/21 17:54

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	199.4	100	85-115	ug/L	
Calcium	400	422.1	106	85-115	ug/L	
Potassium	400	386.8	97	85-115	ug/L	
Sodium	400	507.4	127	85-115	ug/L	X

Analytical Method: EPA 200.8
Seq Number: 188363 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/11/21 13:31

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	40.00	39.13	98	85-115	ug/L	
Arsenic	40.00	37.21	93	85-115	ug/L	
Barium	40.00	38.96	97	85-115	ug/L	
Beryllium	40.00	36.75	92	85-115	ug/L	
Cadmium	40.00	39.62	99	85-115	ug/L	
Calcium	400	420	105	85-115	ug/L	
Chromium	40.00	36.88	92	85-115	ug/L	
Cobalt	40.00	37.42	94	85-115	ug/L	
Copper	40.00	38.34	96	85-115	ug/L	
Iron	400	447.5	112	85-115	ug/L	
Lead	40.00	38.96	97	85-115	ug/L	
Magnesium	400	360.4	90	85-115	ug/L	
Manganese	40.00	39.62	99	85-115	ug/L	
Nickel	40.00	38.30	96	85-115	ug/L	
Selenium	40.00	38.47	96	85-115	ug/L	
Silver	40.00	40.64	102	85-115	ug/L	
Sodium	400	374	94	85-115	ug/L	
Thallium	40.00	39.83	100	85-115	ug/L	
Vanadium	40.00	38.78	97	85-115	ug/L	
Zinc	200	197.9	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188363 Matrix: Water

CCV Sample Id: CCV 2 Analyzed Date: 10/11/21 14:32

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	40.00	39.28	98	85-115	ug/L	
Arsenic	40.00	39.09	98	85-115	ug/L	
Barium	40.00	38.95	97	85-115	ug/L	
Beryllium	40.00	44.33	111	85-115	ug/L	
Cadmium	40.00	39.73	99	85-115	ug/L	
Calcium	400	521.6	130	85-115	ug/L	X
Chromium	40.00	40.92	102	85-115	ug/L	
Cobalt	40.00	39.03	98	85-115	ug/L	
Copper	40.00	39.55	99	85-115	ug/L	
Iron	400	504.3	126	85-115	ug/L	X
Lead	40.00	39.65	99	85-115	ug/L	
Magnesium	400	419.7	105	85-115	ug/L	
Manganese	40.00	43.20	108	85-115	ug/L	
Nickel	40.00	39.78	99	85-115	ug/L	
Selenium	40.00	42.22	106	85-115	ug/L	
Silver	40.00	40.19	100	85-115	ug/L	
Sodium	400	1016	254	85-115	ug/L	X
Thallium	40.00	39.83	100	85-115	ug/L	
Vanadium	40.00	43.46	109	85-115	ug/L	
Zinc	200	206.6	103	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188363 Matrix: Water

CCV Sample Id: CCV 3 Analyzed Date: 10/11/21 15:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	40.00	38.71	97	85-115	ug/L	
Arsenic	40.00	35.40	89	85-115	ug/L	
Barium	40.00	38.42	96	85-115	ug/L	
Beryllium	40.00	37.17	93	85-115	ug/L	
Cadmium	40.00	38.75	97	85-115	ug/L	
Calcium	400	460.8	115	85-115	ug/L	
Chromium	40.00	35.71	89	85-115	ug/L	
Cobalt	40.00	37.03	93	85-115	ug/L	
Copper	40.00	37.61	94	85-115	ug/L	
Iron	400	479	120	85-115	ug/L	X
Lead	40.00	39.85	100	85-115	ug/L	
Magnesium	400	362.4	91	85-115	ug/L	
Manganese	40.00	39.10	98	85-115	ug/L	
Nickel	40.00	37.91	95	85-115	ug/L	
Selenium	40.00	36.42	91	85-115	ug/L	
Silver	40.00	40.58	101	85-115	ug/L	
Sodium	400	527.1	132	85-115	ug/L	X
Thallium	40.00	39.83	100	85-115	ug/L	
Vanadium	40.00	37.23	93	85-115	ug/L	
Zinc	200	193.9	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188445 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/13/21 17:00

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	207.9	104	85-115	ug/L	
Calcium	400	401.9	100	85-115	ug/L	
Potassium	400	454.8	114	85-115	ug/L	
Sodium	400	434.3	109	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188453 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/14/21 14:19

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	206.6	103	85-115	ug/L	
Calcium	400	544.5	136	85-115	ug/L	X
Potassium	400	449.3	112	85-115	ug/L	
Sodium	400	406.1	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 188329 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/08/21 12:23

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	197.9	99	90-110	ug/L	
Calcium	400	401.4	100	90-110	ug/L	
Potassium	400	375.5	94	90-110	ug/L	
Sodium	400	371.5	93	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188363 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/11/21 12:11

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	40.00	39.54	99	90-110	ug/L	
Arsenic	40.00	37.35	93	90-110	ug/L	
Barium	40.00	39.07	98	90-110	ug/L	
Beryllium	40.00	40.05	100	90-110	ug/L	
Cadmium	40.00	40.05	100	90-110	ug/L	
Calcium	400	415.8	104	90-110	ug/L	
Chromium	40.00	37.00	93	90-110	ug/L	
Cobalt	40.00	37.65	94	90-110	ug/L	
Copper	40.00	38.46	96	90-110	ug/L	
Iron	400	435.5	109	90-110	ug/L	
Lead	40.00	39.54	99	90-110	ug/L	
Magnesium	400	368.9	92	90-110	ug/L	
Manganese	40.00	40.27	101	90-110	ug/L	
Nickel	40.00	38.63	97	90-110	ug/L	
Selenium	40.00	38.57	96	90-110	ug/L	
Silver	40.00	40.97	102	90-110	ug/L	
Sodium	400	383	96	90-110	ug/L	
Thallium	40.00	39.82	100	90-110	ug/L	
Vanadium	40.00	38.59	96	90-110	ug/L	
Zinc	200	202.9	101	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188445 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/13/21 15:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	219.3	110	90-110	ug/L	
Calcium	400	397.9	99	90-110	ug/L	
Potassium	400	436.2	109	90-110	ug/L	
Sodium	400	422.1	106	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 188453 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/14/21 13:12

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	199	100	90-110	ug/L	
Calcium	400	409.3	102	90-110	ug/L	
Potassium	400	391.7	98	90-110	ug/L	
Sodium	400	388.9	97	90-110	ug/L	

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Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 608 .3
Seq Number: 188387 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/11/21 07:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	0.1000	0.09725	97	75-125	mg/L	
PCB-1016	0.1000	0.09470	95	75-125	mg/L	
PCB-1016	0.1000	0.09782	98	75-125	mg/L	
PCB-1016	0.1000	0.09642	96	75-125	mg/L	
PCB-1016	0.1000	0.1025	103	75-125	mg/L	
PCB-1260	0.1000	0.1055	106	75-125	mg/L	
PCB-1260	0.1000	0.1041	104	75-125	mg/L	
PCB-1260	0.1000	0.09973	100	75-125	mg/L	
PCB-1260	0.1000	0.09899	99	75-125	mg/L	
PCB-1260	0.1000	0.09335	93	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	104	60-139	%	
Tetrachloro-m-xylene	99	23-136	%	

Analytical Method: EPA 608 .3
Seq Number: 188387 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 10/11/21 12:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	0.1000	0.1021	102	75-125	mg/L	
PCB-1016	0.1000	0.09903	99	75-125	mg/L	
PCB-1016	0.1000	0.1038	104	75-125	mg/L	
PCB-1016	0.1000	0.1012	101	75-125	mg/L	
PCB-1016	0.1000	0.1064	106	75-125	mg/L	
PCB-1260	0.1000	0.1102	110	75-125	mg/L	
PCB-1260	0.1000	0.1094	109	75-125	mg/L	
PCB-1260	0.1000	0.1041	104	75-125	mg/L	
PCB-1260	0.1000	0.1043	104	75-125	mg/L	
PCB-1260	0.1000	0.09800	98	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	99	60-139	%	
Tetrachloro-m-xylene	102	23-136	%	

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Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 608 .3
Seq Number: 188389 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/12/21 07:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
4,4-DDD	0.02000	0.02043	102	75-125	mg/L	
4,4-DDE	0.02000	0.02211	111	75-125	mg/L	
4,4-DDT	0.02000	0.02320	116	75-125	mg/L	
Aldrin	0.02000	0.02180	109	75-125	mg/L	
alpha-BHC	0.02000	0.02182	109	69-125	mg/L	
alpha-Chlordane	0.02000	0.01976	99	73-125	mg/L	
beta-BHC	0.02000	0.02039	102	75-125	mg/L	
delta-BHC	0.02000	0.02141	107	75-125	mg/L	
Dieldrin	0.02000	0.02132	107	48-125	mg/L	
Endosulfan I	0.02000	0.02109	105	75-125	mg/L	
Endosulfan II	0.02000	0.02137	107	75-125	mg/L	
Endosulfan sulfate	0.02000	0.02116	106	70-125	mg/L	
Endrin	0.02000	0.02122	106	5-125	mg/L	
Endrin aldehyde	0.02000	0.01909	95	75-125	mg/L	
gamma-BHC (Lindane)	0.02000	0.02141	107	75-125	mg/L	
gamma-Chlordane	0.02000	0.02139	107	75-125	mg/L	
Heptachlor	0.02000	0.02158	108	75-125	mg/L	
Heptachlor epoxide	0.02000	0.02132	107	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	114	60-139	%	
Tetrachloro-m-xylene	102	23-136	%	

Analytical Method: EPA 608 .3
Seq Number: 188389 Matrix: Water
CCV Sample Id: TOX Analyzed Date: 10/12/21 08:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Toxaphene	0.3000	0.2760	92	68-134	mg/L	
Toxaphene	0.3000	0.2901	97	68-134	mg/L	
Toxaphene	0.3000	0.3186	106	68-134	mg/L	
Toxaphene	0.3000	0.3296	110	68-134	mg/L	
Toxaphene	0.3000	0.3141	105	68-134	mg/L	

Surrogate	CCV Result	Limits	Units	Flag

Analytical Method: EPA 608 .3
Seq Number: 188389 Matrix: Water
CCV Sample Id: CHLOR Analyzed Date: 10/12/21 08:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Chlordane	0.3000	0.2908	97	75-125	mg/L	
Chlordane	0.3000	0.2815	94	75-125	mg/L	
Chlordane	0.3000	0.2821	94	75-125	mg/L	
Chlordane	0.3000	0.2852	95	75-125	mg/L	
Chlordane	0.3000	0.2908	97	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag

Analytical Method: EPA 608 .3
Seq Number: 188389 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 10/12/21 11:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
4,4-DDD	0.02000	0.02035	102	75-125	mg/L	
4,4-DDE	0.02000	0.02168	108	75-125	mg/L	
4,4-DDT	0.02000	0.02314	116	75-125	mg/L	
Aldrin	0.02000	0.02168	108	75-125	mg/L	
alpha-BHC	0.02000	0.02173	109	69-125	mg/L	
alpha-Chlordane	0.02000	0.01962	98	73-125	mg/L	
beta-BHC	0.02000	0.02086	104	75-125	mg/L	
delta-BHC	0.02000	0.02144	107	75-125	mg/L	
Dieldrin	0.02000	0.02106	105	48-125	mg/L	
Endosulfan I	0.02000	0.02115	106	75-125	mg/L	
Endosulfan II	0.02000	0.02142	107	75-125	mg/L	
Endosulfan sulfate	0.02000	0.02134	107	70-125	mg/L	
Endrin	0.02000	0.02188	109	5-125	mg/L	
Endrin aldehyde	0.02000	0.01972	99	75-125	mg/L	
gamma-BHC (Lindane)	0.02000	0.02142	107	75-125	mg/L	
gamma-Chlordane	0.02000	0.02131	107	75-125	mg/L	
Heptachlor	0.02000	0.02226	111	75-125	mg/L	
Heptachlor epoxide	0.02000	0.02138	107	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	115	60-139	%	
Tetrachloro-m-xylene	102	23-136	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 608 .3
Seq Number: 188389 Matrix: Water
CCV Sample Id: TOX Analyzed Date: 10/12/21 11:16

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Toxaphene	0.3000	0.2655	89	68-134	mg/L	
Toxaphene	0.3000	0.2753	92	68-134	mg/L	
Toxaphene	0.3000	0.3022	101	68-134	mg/L	
Toxaphene	0.3000	0.3131	104	68-134	mg/L	
Toxaphene	0.3000	0.2993	100	68-134	mg/L	

Surrogate	CCV Result	Limits	Units	Flag

Analytical Method: EPA 608 .3
Seq Number: 188389 Matrix: Water
CCV Sample Id: CHLOR Analyzed Date: 10/12/21 11:30

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Chlordane	0.3000	0.2900	97	75-125	mg/L	
Chlordane	0.3000	0.2829	94	75-125	mg/L	
Chlordane	0.3000	0.2831	94	75-125	mg/L	
Chlordane	0.3000	0.2874	96	75-125	mg/L	
Chlordane	0.3000	0.2946	98	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag

Analytical Method: EPA 608 .3

Seq Number: 186619 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/09/21 10:17

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
4,4-DDD	0.02000	0.02045	102	75-125	mg/L	
4,4-DDE	0.02000	0.02071	104	75-125	mg/L	
4,4-DDT	0.02000	0.02078	104	75-125	mg/L	
Aldrin	0.02000	0.02069	103	75-125	mg/L	
alpha-BHC	0.02000	0.02089	104	69-125	mg/L	
alpha-Chlordane	0.02000	0.02042	102	73-125	mg/L	
beta-BHC	0.02000	0.02031	102	75-125	mg/L	
delta-BHC	0.02000	0.02083	104	75-125	mg/L	
Dieldrin	0.02000	0.02056	103	48-125	mg/L	
Endosulfan I	0.02000	0.02036	102	75-125	mg/L	
Endosulfan II	0.02000	0.02059	103	75-125	mg/L	
Endosulfan sulfate	0.02000	0.02018	101	70-125	mg/L	
Endrin	0.02000	0.02044	102	5-125	mg/L	
Endrin aldehyde	0.02000	0.02049	102	75-125	mg/L	
gamma-BHC (Lindane)	0.02000	0.02075	104	75-125	mg/L	
gamma-Chlordane	0.02000	0.02049	102	75-125	mg/L	
Heptachlor	0.02000	0.02052	103	75-125	mg/L	
Heptachlor epoxide	0.02000	0.02035	102	75-125	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Decachlorobiphenyl	99	60-139	%	
Tetrachloro-m-xylene	102	23-136	%	

Analytical Method: EPA 608 .3

Seq Number: 186619 Matrix: Water
Parent Sample Id: ICV-02 ICV Sample Id: ICV-02 Analyzed Date: 08/09/21 11:58

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Toxaphene	0.3000	0.2953	98	68-134	mg/L	
Toxaphene	0.3000	0.2999	100	68-134	mg/L	
Toxaphene	0.3000	0.3028	101	68-134	mg/L	
Toxaphene	0.3000	0.2960	99	68-134	mg/L	
Toxaphene	0.3000	0.3037	101	68-134	mg/L	

Surrogate	ICV Result	Limits	Units	Flag

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 608 .3

Seq Number: 186619 Matrix: Water
Parent Sample Id: ICV-03 ICV Sample Id: ICV-03 Analyzed Date: 08/09/21 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Chlordane	0.3000	0.2964	99	75-125	mg/L	
Chlordane	0.3000	0.2960	99	75-125	mg/L	
Chlordane	0.3000	0.2973	99	75-125	mg/L	
Chlordane	0.3000	0.2960	99	75-125	mg/L	
Chlordane	0.3000	0.2918	97	75-125	mg/L	

Surrogate	ICV Result	Limits	Units	Flag

Analytical Method: EPA 625 .1

Seq Number: 188373 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/11/21 14:25

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,2,4-Trichlorobenzene	40.00	37.08	93	61-130	mg/L	
1,2-Diphenylhydrazine	40.00	48.71	122	60-140	mg/L	
2,4,6-Trichlorophenol	40.00	36.01	90	69-130	mg/L	
2,4-Dichlorophenol	40.00	35.16	88	64-130	mg/L	
2,4-Dimethylphenol	40.00	33.91	85	58-130	mg/L	
2,4-Dinitrophenol	40.00	31.10	78	39-173	mg/L	
2,4-Dinitrotoluene	40.00	33.31	83	53-130	mg/L	
2,6-Dinitrotoluene	40.00	33.93	85	68-137	mg/L	
2-Chloronaphthalene	40.00	40.73	102	70-130	mg/L	
2-Chlorophenol	40.00	39.70	99	55-130	mg/L	
2-Nitrophenol	40.00	32.63	82	61-163	mg/L	
3,3-Dichlorobenzidine	40.00	40.28	101	18-213	mg/L	
4,6-Dinitro-2-methyl phenol	40.00	36.68	92	56-130	mg/L	
4-Bromophenylphenyl ether	40.00	37.71	94	70-130	mg/L	
4-Chloro-3-methyl phenol	40.00	43.69	109	68-130	mg/L	
4-Chlorophenyl Phenyl ether	40.00	43.66	109	57-145	mg/L	
4-Nitrophenol	40.00	44.48	111	35-130	mg/L	
Acenaphthene	40.00	39.90	100	70-130	mg/L	
Acenaphthylene	40.00	37.35	93	60-130	mg/L	
Anthracene	40.00	34.33	86	58-130	mg/L	
Benzidine	40.00	34.51	86	60-140	mg/L	
Benzo(a)anthracene	40.00	33.72	84	42-133	mg/L	
Benzo(a)pyrene	40.00	36.46	91	32-138	mg/L	
Benzo(b)fluoranthene	40.00	37.87	95	42-140	mg/L	
Benzo(g,h,i)perylene	40.00	35.20	88	13-195	mg/L	
Benzo(k)fluoranthene	40.00	35.00	88	25-146	mg/L	
Butyl benzyl phthalate	40.00	36.77	92	43-140	mg/L	
bis(2-chloroethoxy) methane	40.00	31.47	79	52-164	mg/L	
bis(2-chloroethyl) ether	40.00	37.11	93	52-130	mg/L	
bis(2-chloroisopropyl) ether	40.00	33.85	85	63-139	mg/L	
bis(2-ethylhexyl) phthalate	40.00	36.44	91	43-137	mg/L	
Chrysene	40.00	41.51	104	44-140	mg/L	
Dibenz(a,h)Anthracene	40.00	37.36	93	13-200	mg/L	
Diethyl phthalate	40.00	41.58	104	47-130	mg/L	
Dimethyl phthalate	40.00	37.58	94	50-130	mg/L	
Di-n-butyl phthalate	40.00	38.04	95	52-130	mg/L	
Di-n-octyl phthalate	40.00	39.97	100	21-132	mg/L	
Fluoranthene	40.00	37.11	93	47-130	mg/L	
Fluorene	40.00	38.48	96	70-130	mg/L	
Hexachlorobenzene	40.00	47.15	118	38-142	mg/L	
Hexachlorobutadiene	40.00	43.80	110	68-130	mg/L	
Hexachlorocyclopentadiene	40.00	39.90	100	60-140	mg/L	
Hexachloroethane	40.00	46.31	116	55-130	mg/L	
Indeno(1,2,3-c,d)Pyrene	40.00	35.52	89	13-151	mg/L	
Isophorone	40.00	32.77	82	52-180	mg/L	
Naphthalene	40.00	37.95	95	70-130	mg/L	
Nitrobenzene	40.00	37.07	93	54-158	mg/L	
N-Nitrosodimethylamine	40.00	32.77	82	60-140	mg/L	
N-Nitrosodi-n-propyl amine	40.00	35.66	89	59-170	mg/L	
N-Nitrosodiphenylamine	40.00	40.10	100	60-140	mg/L	
Pentachlorophenol	40.00	34.47	86	42-152	mg/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 625 .1

Seq Number: 188373 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/11/21 14:25

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Phenanthrene	40.00	46.16	115	67-130	mg/L	
Phenol	40.00	37.67	94	48-130	mg/L	
Pyrene	40.00	38.33	96	70-130	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	100	60-140	%	
2-Fluorophenol	94	60-140	%	
Nitrobenzene-d5	98	46-219	%	
2,4,6-Tribromophenol	112	60-140	%	
Phenol-d6	103	48-208	%	
Terphenyl-D14	94	60-140	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 625 .1

Seq Number: 185838 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/09/21 17:07

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,2,4-Trichlorobenzene	40.00	37.90	95	61-130	mg/L	
1,2-Diphenylhydrazine	40.00	40.88	102	60-140	mg/L	
2,4,6-Trichlorophenol	40.00	39.60	99	69-130	mg/L	
2,4-Dichlorophenol	40.00	39.17	98	64-130	mg/L	
2,4-Dimethylphenol	40.00	37.45	94	58-130	mg/L	
2,4-Dinitrophenol	40.00	41.76	104	39-173	mg/L	
2,4-Dinitrotoluene	40.00	36.79	92	53-130	mg/L	
2,6-Dinitrotoluene	40.00	37.65	94	68-137	mg/L	
2-Chloronaphthalene	40.00	36.66	92	70-130	mg/L	
2-Chlorophenol	40.00	39.41	99	55-130	mg/L	
2-Nitrophenol	40.00	39.43	99	61-163	mg/L	
3,3-Dichlorobenzidine	40.00	36.63	92	18-213	mg/L	
4,6-Dinitro-2-methyl phenol	40.00	42.24	106	56-130	mg/L	
4-Bromophenylphenyl ether	40.00	39.21	98	70-130	mg/L	
4-Chloro-3-methyl phenol	40.00	38.96	97	68-130	mg/L	
4-Chlorophenyl Phenyl ether	40.00	39.20	98	57-145	mg/L	
4-Nitrophenol	40.00	38.27	96	35-130	mg/L	
Acenaphthene	40.00	36.44	91	70-130	mg/L	
Acenaphthylene	40.00	36.75	92	60-130	mg/L	
Anthracene	40.00	36.77	92	58-130	mg/L	
Benzidine	40.00	32.74	82	60-140	mg/L	
Benzo(a)anthracene	40.00	35.28	88	42-133	mg/L	
Benzo(a)pyrene	40.00	38.33	96	32-138	mg/L	
Benzo(b)fluoranthene	40.00	36.70	92	42-140	mg/L	
Benzo(g,h,i)perylene	40.00	40.44	101	13-195	mg/L	
Benzo(k)fluoranthene	40.00	39.85	100	25-146	mg/L	
Butyl benzyl phthalate	40.00	37.94	95	43-140	mg/L	
bis(2-chloroethoxy) methane	40.00	38.13	95	52-164	mg/L	
bis(2-chloroethyl) ether	40.00	38.11	95	52-130	mg/L	
bis(2-chloroisopropyl) ether	40.00	37.33	93	63-139	mg/L	
bis(2-ethylhexyl) phthalate	40.00	36.47	91	43-137	mg/L	
Chrysene	40.00	36.84	92	44-140	mg/L	
Dibenz(a,h)Anthracene	40.00	39.09	98	13-200	mg/L	
Diethyl phthalate	40.00	38.20	96	47-130	mg/L	
Dimethyl phthalate	40.00	37.66	94	50-130	mg/L	
Di-n-butyl phthalate	40.00	37.45	94	52-130	mg/L	
Di-n-octyl phthalate	40.00	37.82	95	21-132	mg/L	
Fluoranthene	40.00	36.93	92	47-130	mg/L	
Fluorene	40.00	37.04	93	70-130	mg/L	
Hexachlorobenzene	40.00	37.74	94	38-142	mg/L	
Hexachlorobutadiene	40.00	38.19	95	68-130	mg/L	
Hexachlorocyclopentadiene	40.00	36.62	92	60-140	mg/L	
Hexachloroethane	40.00	37.52	94	55-130	mg/L	
Indeno(1,2,3-c,d)Pyrene	40.00	39.63	99	13-151	mg/L	
Isophorone	40.00	36.24	91	52-180	mg/L	
Naphthalene	40.00	36.70	92	70-130	mg/L	
Nitrobenzene	40.00	36.41	91	54-158	mg/L	
N-Nitrosodimethylamine	40.00	39.01	98	60-140	mg/L	
N-Nitrosodi-n-propyl amine	40.00	37.40	94	59-170	mg/L	
N-Nitrosodiphenylamine	40.00	36.81	92	60-140	mg/L	
Pentachlorophenol	40.00	41.86	105	42-152	mg/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 625 .1

Seq Number: 185838 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/09/21 17:07

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Phenanthrene	40.00	35.60	89	67-130	mg/L	
Phenol	40.00	38.54	96	48-130	mg/L	
Pyrene	40.00	37.16	93	70-130	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	95	80-120	%	
2-Fluorophenol	97	80-120	%	
Nitrobenzene-d5	96	46-219	%	
2,4,6-Tribromophenol	100	80-120	%	
Phenol-d6	95	48-208	%	
Terphenyl-D14	95	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 21100715

Analytical Method: EPA 624 .1

Seq Number: 186298 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/27/21 13:25

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05190	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05150	103	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05535	111	54-148	mg/L	
Chloromethane	0.05000	0.05663	113	57-135	mg/L	
Vinyl Chloride	0.05000	0.05400	108	64-129	mg/L	
Bromomethane	0.05000	0.05306	106	67-132	mg/L	
Chloroethane	0.05000	0.05149	103	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05188	104	71-137	mg/L	
2-Chloroethyl Vinyl ether	0.05000	0.04802	96	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05120	102	67-126	mg/L	
Methylene Chloride	0.05000	0.05415	108	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05096	102	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05104	102	76-127	mg/L	
Chloroform	0.05000	0.05139	103	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05311	106	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05391	108	73-130	mg/L	
Benzene	0.05000	0.05427	109	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05128	103	77-129	mg/L	
Trichloroethene	0.05000	0.05270	105	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05327	107	74-129	mg/L	
Bromodichloromethane	0.05000	0.05345	107	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05109	102	76-116	mg/L	
Toluene	0.05000	0.05592	112	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05220	104	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05300	106	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05617	112	78-128	mg/L	
Dibromochloromethane	0.05000	0.05438	109	70-132	mg/L	
Chlorobenzene	0.05000	0.05458	109	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05224	104	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05336	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05386	108	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05275	106	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05418	108	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	102	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 21100705 (10/7/21) 21100715 | PAGE 1 OF 1

BILL TO (If different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	TAL Metals (200.8)	Total Cyanide (SM 4500-CN-E-2011)	Mercury, Total (245.1)	Pesticides (608.3)	PCBs (608.3)	SVOCs (625.1)	VOCs (624.1)	BOD	COD	TSS	Oil & Grease	Flashpoint
1	Resin Cleaning Water	10/7/21	1210	WW	14	G	X	X	X	X	X	X	X	X	X	X	X	X
2	TB-100721-RCW	—	—	TB	2	—							X					

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1)	10/7/21	1320	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: COOLER-INTACT

Coolers: 1 Temp: 22.4-22.9°C

Shipping Carrier: CLIENT

Special Instructions: TEMP BLANK = 21.9°C

5-day TAT

pH = 8.09 SU, Temp = 22.8°C at time of sample collection

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21100715

Client Name WSP USA - Herndon
Disposal Date 11/11/2021

Received By Brad Crozier
Date Received 10/07/2021 01:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Brad Crozier

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	22.9
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	16

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	Yes
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	Yes
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

PHASE SEPARATION SCIENCE

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 21100715

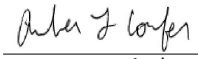
Client Name	WSP USA - Herndon	**Received By**	Brad Crozier
Disposal Date	11/11/2021	**Date Received**	10/07/2021 01:20:00 PM
		Delivered By	Client
		Tracking No	Not Applicable
		Logged In By	Brad Crozier

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Preservative not indicated on COC for metals, cyanide, COD, oil and grease, and VOC. Received containers preserved with HNO3, NaOH, H2SO4, and a 624 kit with two unpreserved vials and one preserved iwh HCl.

Samples Inspected/Checklist Completed By:  Brad Crozier Date: 10/07/2021

PM Review and Approval:  Amber Confer Date: 10/07/2021

APPENDIX

C INFORMATION ON PRE-TREATMENT PILOT TESTING AND 2021 RESIN CLEANING

C-1 LAB REPORTS FOR PRE-TREATMENT TECHNOLOGY EVALUATION

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-36330-1
Client Project/Site: Former Kop-Flex Facility Site

For:
WSP USA Corp.
Attn: Environmental Accounts Payable
13530 Dulles Technology Drive
Suite 300
Herndon, Virginia 20171

Attn: Eric Johnson

Authorized for release by:
5/24/2021 2:48:12 PM

Hannah Cottman, Operations Support Specialist
(717)556-7383
Hannah.Cottman@eurofinset.com

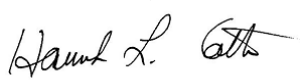
Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Hannah Cottman
Operations Support Specialist
5/24/2021 2:48:12 PM

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-36330-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-36330-1

Receipt
The samples were received on 4/16/2021 5:22 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.1°C

Receipt Exceptions
A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

SUBCONTRACTING

The following analyses were subcontracted to ALS Environmental:
Low Level TOC
Tannins and Lignins

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-118257 recovered outside acceptance criteria, low biased, for Vinyl chloride, Dichlorodifluoromethane and Cyclohexane.. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Method 8260C: The continuing calibration verification (CCV) analyzed in batch 410-118257 is compliant under 8260C method criteria for Carbon tetrachloride. The software does not display the % Drift data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the check passes the criteria with a value of 20% Drift.

Method 8260C: The following analyte(s) recovered outside control limits for the LCS/LCSD associated with 410-118257: 1,1,1-Trichloroethane and 1,2-Dichloroethane. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Subcontract Lab non-Sister Lab
See attached subcontract report.

Detection Summary

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Effluent — Lab Sample ID: 410-36330-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	75		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	21	*+	1.0	0.30	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	38		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	210		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	1.6	*+	1.0	0.30	ug/L	1		8260C	Total/NA
2-Butanone	17		10	0.30	ug/L	1		8260C	Total/NA
Acetone	11	J	20	0.70	ug/L	1		8260C	Total/NA
Chloroethane	3.9		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	0.40	J	1.0	0.20	ug/L	1		8260C	Total/NA
Trichloroethene	0.56	J	1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	0.52	J	1.0	0.20	ug/L	1		8260C	Total/NA

Client Sample ID: Column Influent — Lab Sample ID: 410-36330-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	79		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	20	*+	1.0	0.30	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	36		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	210		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	1.6	*+	1.0	0.30	ug/L	1		8260C	Total/NA
2-Butanone	3.2	J	10	0.30	ug/L	1		8260C	Total/NA
Chloroethane	3.4		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.92	J	1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	0.38	J	1.0	0.20	ug/L	1		8260C	Total/NA
Trichloroethene	0.69	J	1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	0.21	J	1.0	0.20	ug/L	1		8260C	Total/NA

Client Sample ID: Column Effluent-041421 — Lab Sample ID: 410-36330-3

No Detections.

Client Sample ID: Column Influent-041421 — Lab Sample ID: 410-36330-4

No Detections.

Client Sample ID: Column Effluent-041621 — Lab Sample ID: 410-36330-5

No Detections.

Client Sample ID: Column Influent-041621 — Lab Sample ID: 410-36330-6

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 410-36330-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-36330-1

Client Sample ID: Column Effluent

Lab Sample ID: 410-36330-1

Date Collected: 04/12/21 09:50

Matrix: Water

Date Received: 04/16/21 17:22

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**75**		4.0	1.7	ug/L			04/26/21 13:24	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/26/21 13:24*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**21**	***+**	1.0	0.30	ug/L			04/23/21 17:44	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/23/21 17:44	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
1,1-Dichloroethane	**38**		1.0	0.20	ug/L			04/23/21 17:44	1
1,1-Dichloroethene	**210**		1.0	0.20	ug/L			04/23/21 17:44	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/23/21 17:44	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/23/21 17:44	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/23/21 17:44	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
1,2-Dichloroethane	**1.6**	***+**	1.0	0.30	ug/L			04/23/21 17:44	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
2-Butanone	**17**		10	0.30	ug/L			04/23/21 17:44	1
2-Hexanone	<0.30		10	0.30	ug/L			04/23/21 17:44	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/23/21 17:44	1
Acetone	**11**	**J**	20	0.70	ug/L			04/23/21 17:44	1
Benzene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Bromoform	<1.0		4.0	1.0	ug/L			04/23/21 17:44	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/23/21 17:44	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Chloroethane	**3.9**		1.0	0.20	ug/L			04/23/21 17:44	1
Chloroform	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
cis-1,2-Dichloroethene	**1.1**		1.0	0.20	ug/L			04/23/21 17:44	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/23/21 17:44	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/23/21 17:44	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/23/21 17:44	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/23/21 17:44	1
Methyl tertiary butyl ether	**0.40**	**J**	1.0	0.20	ug/L			04/23/21 17:44	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/23/21 17:44	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/23/21 17:44	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/23/21 17:44	1

Client Sample ID: Column Effluent
Lab Sample ID: 410-36330-1
Date Collected: 04/12/21 09:50
Matrix: Water
Date Received: 04/16/21 17:22

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			04/23/21 17:44	1
Styrene	<0.20		5.0	0.20	ug/L			04/23/21 17:44	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Toluene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Trichloroethene	**0.56**	**J**	1.0	0.20	ug/L			04/23/21 17:44	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 17:44	1
Vinyl chloride	**0.52**	**J**	1.0	0.20	ug/L			04/23/21 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*04/23/21 17:44*	*1*
Dibromofluoromethane (Surr)	*119*		*80 - 120*		*04/23/21 17:44*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/23/21 17:44*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*04/23/21 17:44*	*1*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-36330-1

Client Sample ID: Column Influent

Lab Sample ID: 410-36330-2

Date Collected: 04/12/21 09:55

Matrix: Water

Date Received: 04/16/21 17:22

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**79**		4.0	1.7	ug/L			04/26/21 13:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/26/21 13:44*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**20**	***+**	1.0	0.30	ug/L			04/23/21 18:10	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/23/21 18:10	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
1,1-Dichloroethane	**36**		1.0	0.20	ug/L			04/23/21 18:10	1
1,1-Dichloroethene	**210**		1.0	0.20	ug/L			04/23/21 18:10	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/23/21 18:10	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/23/21 18:10	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/23/21 18:10	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
1,2-Dichloroethane	**1.6**	***+**	1.0	0.30	ug/L			04/23/21 18:10	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
2-Butanone	**3.2**	**J**	10	0.30	ug/L			04/23/21 18:10	1
2-Hexanone	<0.30		10	0.30	ug/L			04/23/21 18:10	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/23/21 18:10	1
Acetone	<0.70		20	0.70	ug/L			04/23/21 18:10	1
Benzene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Bromoform	<1.0		4.0	1.0	ug/L			04/23/21 18:10	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/23/21 18:10	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Chloroethane	**3.4**		1.0	0.20	ug/L			04/23/21 18:10	1
Chloroform	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
cis-1,2-Dichloroethene	**0.92**	**J**	1.0	0.20	ug/L			04/23/21 18:10	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/23/21 18:10	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/23/21 18:10	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/23/21 18:10	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/23/21 18:10	1
Methyl tertiary butyl ether	**0.38**	**J**	1.0	0.20	ug/L			04/23/21 18:10	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/23/21 18:10	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/23/21 18:10	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/23/21 18:10	1

Client Sample ID: Column Influent
Lab Sample ID: 410-36330-2
Date Collected: 04/12/21 09:55
Matrix: Water
Date Received: 04/16/21 17:22

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			04/23/21 18:10	1
Styrene	<0.20		5.0	0.20	ug/L			04/23/21 18:10	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Toluene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Trichloroethene	**0.69**	**J**	1.0	0.20	ug/L			04/23/21 18:10	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 18:10	1
Vinyl chloride	**0.21**	**J**	1.0	0.20	ug/L			04/23/21 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*04/23/21 18:10*	*1*
Dibromofluoromethane (Surr)	*119*		*80 - 120*		*04/23/21 18:10*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/23/21 18:10*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*04/23/21 18:10*	*1*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-36330-1

Client Sample ID: Trip Blank

Date Collected: 04/12/21 00:00
Date Received: 04/16/21 17:22

Lab Sample ID: 410-36330-7

Matrix: Water

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			04/26/21 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/26/21 13:04*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30	*+	1.0	0.30	ug/L			04/23/21 12:35	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/23/21 12:35	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/23/21 12:35	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/23/21 12:35	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/23/21 12:35	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
1,2-Dichloroethane	<0.30	*+	1.0	0.30	ug/L			04/23/21 12:35	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
2-Butanone	<0.30		10	0.30	ug/L			04/23/21 12:35	1
2-Hexanone	<0.30		10	0.30	ug/L			04/23/21 12:35	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/23/21 12:35	1
Acetone	<0.70		20	0.70	ug/L			04/23/21 12:35	1
Benzene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Bromoform	<1.0		4.0	1.0	ug/L			04/23/21 12:35	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/23/21 12:35	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Chloroethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Chloroform	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/23/21 12:35	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/23/21 12:35	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/23/21 12:35	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/23/21 12:35	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/23/21 12:35	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/23/21 12:35	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/23/21 12:35	1

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Trip Blank
Lab Sample ID: 410-36330-7
Date Collected: 04/12/21 00:00
Matrix: Water
Date Received: 04/16/21 17:22

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			04/23/21 12:35	1
Styrene	<0.20		5.0	0.20	ug/L			04/23/21 12:35	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Toluene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Trichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/23/21 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*04/23/21 12:35*	*1*
Dibromofluoromethane (Surr)	*114*		*80 - 120*		*04/23/21 12:35*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/23/21 12:35*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*04/23/21 12:35*	*1*

Action Limit Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-36330-1

Client Sample ID: Column Effluent — Lab Sample ID: 410-36330-1

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	21	*+	ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	38		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	**210**		ug/L	**7**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	1.6	*+	ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	17		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	11	J	ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**3.9**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	1.1		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	0.40	J	ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	0.56	J	ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	0.52	J	ug/L	2	1.0	8260C	Total/NA

Client Sample ID: Column Influent — Lab Sample ID: 410-36330-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	20	*+	ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA

Client Sample ID: Column Influent (Continued)
Lab Sample ID: 410-36330-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1-Dichloroethane	36		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	**210**		ug/L	**7**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	1.6	*+	ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	3.2	J	ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	3.4		ug/L	3.6	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	0.92	J	ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	0.38	J	ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	0.69	J	ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	0.21	J	ug/L	2	1.0	8260C	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 410-36330-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	<0.30	*+	ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	<0.20		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	<0.20		ug/L	7	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA

Action Limit Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-36330-1

Client Sample ID: Trip Blank (Continued)

Lab Sample ID: 410-36330-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	<0.30	*+	ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	<0.20		ug/L	3.6	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	<0.20		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	<0.20		ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	<0.20		ug/L	2	1.0	8260C	Total/NA

Surrogate Summary

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-36330-1	Column Effluent	107	119	97	96
410-36330-2	Column Influent	104	119	96	96
410-36330-7	Trip Blank	105	114	97	96
LCS 410-118257/5	Lab Control Sample	105	112	102	96
LCSD 410-118257/7	Lab Control Sample Dup	102	110	103	97
MB 410-118257/9	Method Blank	105	115	96	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		TOL
Lab Sample ID	Client Sample ID	(80-120)
410-36330-1	Column Effluent	92
410-36330-2	Column Influent	92
410-36330-7	Trip Blank	92
LCS 410-118961/4	Lab Control Sample	92
LCSD 410-118961/5	Lab Control Sample Dup	92
MB 410-118961/7	Method Blank	92

Surrogate Legend

TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-118257/9
Matrix: Water
Analysis Batch: 118257

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			04/23/21 11:14	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/23/21 11:14	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/23/21 11:14	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/23/21 11:14	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/23/21 11:14	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			04/23/21 11:14	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
2-Butanone	<0.30		10	0.30	ug/L			04/23/21 11:14	1
2-Hexanone	<0.30		10	0.30	ug/L			04/23/21 11:14	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/23/21 11:14	1
Acetone	<0.70		20	0.70	ug/L			04/23/21 11:14	1
Benzene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Bromoform	<1.0		4.0	1.0	ug/L			04/23/21 11:14	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/23/21 11:14	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Chloroethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Chloroform	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/23/21 11:14	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/23/21 11:14	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/23/21 11:14	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/23/21 11:14	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/23/21 11:14	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/23/21 11:14	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/23/21 11:14	1
o-Xylene	<0.40		1.0	0.40	ug/L			04/23/21 11:14	1
Styrene	<0.20		5.0	0.20	ug/L			04/23/21 11:14	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Toluene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-118257/9
Matrix: Water
Analysis Batch: 118257

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Trichloroethene	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/23/21 11:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*04/23/21 11:14*	*1*
Dibromofluoromethane (Surr)	*115*		*80 - 120*		*04/23/21 11:14*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/23/21 11:14*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*04/23/21 11:14*	*1*

Lab Sample ID: LCS 410-118257/5
Matrix: Water
Analysis Batch: 118257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	24.5		ug/L		123	67 - 126
1,1,2,2-Tetrachloroethane	20.0	17.5		ug/L		87	72 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	20.2		ug/L		101	73 - 139
1,1,2-Trichloroethane	20.0	19.7		ug/L		98	80 - 120
1,1-Dichloroethane	20.0	19.3		ug/L		97	80 - 120
1,1-Dichloroethene	20.0	21.2		ug/L		106	80 - 131
1,2,3-Trichlorobenzene	20.0	19.6		ug/L		98	66 - 120
1,2,4-Trichlorobenzene	20.0	19.0		ug/L		95	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	19.9		ug/L		99	47 - 131
1,2-Dibromoethane	20.0	19.8		ug/L		99	77 - 120
1,2-Dichlorobenzene	20.0	20.3		ug/L		101	80 - 120
1,2-Dichloroethane	20.0	23.8		ug/L		119	73 - 124
1,2-Dichloropropane	20.0	18.2		ug/L		91	80 - 120
1,3-Dichlorobenzene	20.0	20.2		ug/L		101	80 - 120
1,4-Dichlorobenzene	20.0	20.0		ug/L		100	80 - 120
2-Butanone	150	133		ug/L		89	59 - 135
2-Hexanone	100	89.3		ug/L		89	56 - 135
4-Methyl-2-pentanone	100	92.3		ug/L		92	62 - 133
Acetone	150	125		ug/L		84	54 - 157
Benzene	20.0	19.2		ug/L		96	80 - 120
Bromochloromethane	20.0	20.4		ug/L		102	80 - 120
Bromodichloromethane	20.0	22.5		ug/L		113	71 - 120
Bromoform	20.0	20.7		ug/L		104	51 - 120
Bromomethane	20.0	20.9		ug/L		104	53 - 128
Carbon disulfide	20.0	17.6		ug/L		88	65 - 128
Carbon tetrachloride	20.0	25.1		ug/L		126	64 - 134
Chlorobenzene	20.0	20.2		ug/L		101	80 - 120
Chloroethane	20.0	17.4		ug/L		87	55 - 123
Chloroform	20.0	22.1		ug/L		111	80 - 120
Chloromethane	20.0	16.6		ug/L		83	56 - 121
cis-1,2-Dichloroethene	20.0	20.1		ug/L		101	80 - 125
cis-1,3-Dichloropropene	20.0	19.8		ug/L		99	75 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-118257/5
Matrix: Water
Analysis Batch: 118257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyclohexane	20.0	17.1		ug/L		86	68 - 126
Dibromochloromethane	20.0	21.3		ug/L		106	71 - 120
Dichlorodifluoromethane	20.0	20.4		ug/L		102	41 - 127
Ethylbenzene	20.0	20.0		ug/L		100	80 - 120
Isopropylbenzene	20.0	20.3		ug/L		102	80 - 120
m&p-Xylene	40.0	40.6		ug/L		102	80 - 120
Methyl acetate	20.0	16.9		ug/L		85	54 - 136
Methyl tertiary butyl ether	20.0	19.1		ug/L		95	69 - 122
Methylcyclohexane	20.0	19.4		ug/L		97	67 - 121
Methylene Chloride	20.0	19.6		ug/L		98	80 - 120
Naphthalene	20.0	19.2		ug/L		96	53 - 124
o-Xylene	20.0	19.8		ug/L		99	80 - 120
Styrene	20.0	20.5		ug/L		103	80 - 120
Tetrachloroethene	20.0	20.7		ug/L		103	80 - 120
Toluene	20.0	18.6		ug/L		93	80 - 120
trans-1,2-Dichloroethene	20.0	20.4		ug/L		102	80 - 126
trans-1,3-Dichloropropene	20.0	20.4		ug/L		102	67 - 120
Trichloroethene	20.0	21.2		ug/L		106	80 - 120
Trichlorofluoromethane	20.0	24.1		ug/L		121	55 - 135
Vinyl chloride	20.0	18.2		ug/L		91	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*112*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 410-118257/7
Matrix: Water
Analysis Batch: 118257

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	25.6	*+	ug/L		128	67 - 126	4	30
1,1,2,2-Tetrachloroethane	20.0	18.2		ug/L		91	72 - 120	4	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne	20.0	20.6		ug/L		103	73 - 139	2	30
1,1,2-Trichloroethane	20.0	20.7		ug/L		103	80 - 120	5	30
1,1-Dichloroethane	20.0	20.1		ug/L		100	80 - 120	4	30
1,1-Dichloroethene	20.0	22.2		ug/L		111	80 - 131	5	30
1,2,3-Trichlorobenzene	20.0	20.6		ug/L		103	66 - 120	5	30
1,2,4-Trichlorobenzene	20.0	20.2		ug/L		101	63 - 120	6	30
1,2-Dibromo-3-Chloropropane	20.0	20.3		ug/L		102	47 - 131	2	30
1,2-Dibromoethane	20.0	20.6		ug/L		103	77 - 120	4	30
1,2-Dichlorobenzene	20.0	21.1		ug/L		106	80 - 120	4	30
1,2-Dichloroethane	20.0	25.1	*+	ug/L		125	73 - 124	5	30
1,2-Dichloropropane	20.0	19.0		ug/L		95	80 - 120	4	30
1,3-Dichlorobenzene	20.0	21.0		ug/L		105	80 - 120	4	30
1,4-Dichlorobenzene	20.0	20.9		ug/L		105	80 - 120	5	30
2-Butanone	150	139		ug/L		93	59 - 135	4	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-118257/7
Matrix: Water
Analysis Batch: 118257

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone			100	93.8		ug/L		94	56 - 135	5	30
4-Methyl-2-pentanone			100	96.3		ug/L		96	62 - 133	4	30
Acetone			150	132		ug/L		88	54 - 157	5	30
Benzene			20.0	20.1		ug/L		101	80 - 120	5	30
Bromochloromethane			20.0	21.2		ug/L		106	80 - 120	4	30
Bromodichloromethane			20.0	23.2		ug/L		116	71 - 120	3	30
Bromoform			20.0	21.9		ug/L		109	51 - 120	5	30
Bromomethane			20.0	21.8		ug/L		109	53 - 128	5	30
Carbon disulfide			20.0	18.4		ug/L		92	65 - 128	4	30
Carbon tetrachloride			20.0	26.1		ug/L		130	64 - 134	4	30
Chlorobenzene			20.0	21.3		ug/L		107	80 - 120	5	30
Chloroethane			20.0	18.7		ug/L		94	55 - 123	7	30
Chloroform			20.0	23.5		ug/L		117	80 - 120	6	30
Chloromethane			20.0	17.8		ug/L		89	56 - 121	7	30
cis-1,2-Dichloroethene			20.0	21.0		ug/L		105	80 - 125	4	30
cis-1,3-Dichloropropene			20.0	20.9		ug/L		105	75 - 120	5	30
Cyclohexane			20.0	17.5		ug/L		88	68 - 126	2	30
Dibromochloromethane			20.0	22.1		ug/L		111	71 - 120	4	30
Dichlorodifluoromethane			20.0	20.8		ug/L		104	41 - 127	2	30
Ethylbenzene			20.0	21.2		ug/L		106	80 - 120	6	30
Isopropylbenzene			20.0	21.6		ug/L		108	80 - 120	6	30
m&p-Xylene			40.0	43.0		ug/L		107	80 - 120	6	30
Methyl acetate			20.0	18.3		ug/L		92	54 - 136	8	30
Methyl tertiary butyl ether			20.0	19.7		ug/L		98	69 - 122	3	30
Methylcyclohexane			20.0	19.9		ug/L		99	67 - 121	2	30
Methylene Chloride			20.0	20.1		ug/L		100	80 - 120	2	30
Naphthalene			20.0	20.1		ug/L		100	53 - 124	5	30
o-Xylene			20.0	20.9		ug/L		104	80 - 120	5	30
Styrene			20.0	21.9		ug/L		110	80 - 120	6	30
Tetrachloroethene			20.0	23.1		ug/L		115	80 - 120	11	30
Toluene			20.0	19.7		ug/L		98	80 - 120	5	30
trans-1,2-Dichloroethene			20.0	21.3		ug/L		106	80 - 126	4	30
trans-1,3-Dichloropropene			20.0	21.4		ug/L		107	67 - 120	5	30
Trichloroethene			20.0	22.0		ug/L		110	80 - 120	4	30
Trichlorofluoromethane			20.0	24.7		ug/L		123	55 - 135	2	30
Vinyl chloride			20.0	19.2		ug/L		96	56 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*110*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-118961/7
Matrix: Water
Analysis Batch: 118961

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			04/26/21 12:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/26/21 12:43*	*1*

Lab Sample ID: LCS 410-118961/4
Matrix: Water
Analysis Batch: 118961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			4.81	4.72		ug/L		98	74 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*92*		*80 - 120*

Lab Sample ID: LCSD 410-118961/5
Matrix: Water
Analysis Batch: 118961

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			4.81	4.87		ug/L		101	74 - 133	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*92*		*80 - 120*

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

GC/MS VOA

Analysis Batch: 118257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-36330-1	Column Effluent	Total/NA	Water	8260C	
410-36330-2	Column Influent	Total/NA	Water	8260C	
410-36330-7	Trip Blank	Total/NA	Water	8260C	
MB 410-118257/9	Method Blank	Total/NA	Water	8260C	
LCS 410-118257/5	Lab Control Sample	Total/NA	Water	8260C	
LCSD 410-118257/7	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 118961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-36330-1	Column Effluent	Total/NA	Water	8260C SIM 14D	
410-36330-2	Column Influent	Total/NA	Water	8260C SIM 14D	
410-36330-7	Trip Blank	Total/NA	Water	8260C SIM 14D	
MB 410-118961/7	Method Blank	Total/NA	Water	8260C SIM 14D	
LCS 410-118961/4	Lab Control Sample	Total/NA	Water	8260C SIM 14D	
LCSD 410-118961/5	Lab Control Sample Dup	Total/NA	Water	8260C SIM 14D	

Lab Chronicle

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Effluent
Lab Sample ID: 410-36330-1
Date Collected: 04/12/21 09:50
Matrix: Water
Date Received: 04/16/21 17:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	118257	04/23/21 17:44	LCW8	ELLE
Total/NA	Analysis	8260C SIM 14D		10	118961	04/26/21 13:24	USEJ	ELLE

Client Sample ID: Column Influent
Lab Sample ID: 410-36330-2
Date Collected: 04/12/21 09:55
Matrix: Water
Date Received: 04/16/21 17:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	118257	04/23/21 18:10	LCW8	ELLE
Total/NA	Analysis	8260C SIM 14D		10	118961	04/26/21 13:44	USEJ	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-36330-7
Date Collected: 04/12/21 00:00
Matrix: Water
Date Received: 04/16/21 17:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	118257	04/23/21 12:35	LCW8	ELLE
Total/NA	Analysis	8260C SIM 14D		1	118961	04/26/21 13:04	USEJ	ELLE

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: WSP USA Corp. Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	1,1,1-Trichloroethane
8260C		Water	1,1,2,2-Tetrachloroethane
8260C		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260C		Water	1,1,2-Trichloroethane
8260C		Water	1,1-Dichloroethane
8260C		Water	1,1-Dichloroethene
8260C		Water	1,2,3-Trichlorobenzene
8260C		Water	1,2,4-Trichlorobenzene
8260C		Water	1,2-Dibromo-3-Chloropropane
8260C		Water	1,2-Dibromoethane
8260C		Water	1,2-Dichlorobenzene
8260C		Water	1,2-Dichloroethane
8260C		Water	1,2-Dichloropropane
8260C		Water	1,3-Dichlorobenzene
8260C		Water	1,4-Dichlorobenzene
8260C		Water	2-Butanone
8260C		Water	2-Hexanone
8260C		Water	4-Methyl-2-pentanone
8260C		Water	Acetone
8260C		Water	Benzene
8260C		Water	Bromochloromethane
8260C		Water	Bromodichloromethane
8260C		Water	Bromoform
8260C		Water	Bromomethane
8260C		Water	Carbon disulfide
8260C		Water	Carbon tetrachloride
8260C		Water	Chlorobenzene
8260C		Water	Chloroethane
8260C		Water	Chloroform
8260C		Water	Chloromethane
8260C		Water	cis-1,2-Dichloroethene
8260C		Water	cis-1,3-Dichloropropene
8260C		Water	Cyclohexane
8260C		Water	Dibromochloromethane
8260C		Water	Dichlorodifluoromethane
8260C		Water	Ethylbenzene
8260C		Water	Isopropylbenzene
8260C		Water	m&p-Xylene
8260C		Water	Methyl acetate
8260C		Water	Methyl tertiary butyl ether
8260C		Water	Methylcyclohexane
8260C		Water	Methylene Chloride
8260C		Water	Naphthalene
8260C		Water	o-Xylene
8260C		Water	Styrene

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22
8260C	Water	Tetrachloroethene	
8260C	Water	Toluene	
8260C	Water	trans-1,2-Dichloroethene	
8260C	Water	trans-1,3-Dichloropropene	
8260C	Water	Trichloroethene	
8260C	Water	Trichlorofluoromethane	
8260C	Water	Vinyl chloride	
8260C SIM 14D	Water	1,4-Dioxane	

Method Summary

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C SIM 14D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
5310C	SM 5310C TOC	SM18	ALS MTown
5550B	SM 5550BTannins and Lignins	SM18	ALS MTown
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: WSP USA Corp.
Job ID: 410-36330-1
Project/Site: Former Kop-Flex Facility Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-36330-1	Column Effluent	Water	04/12/21 09:50	04/16/21 17:22	
410-36330-2	Column Influent	Water	04/12/21 09:55	04/16/21 17:22	
410-36330-3	Column Effluent-041421	Water	04/14/21 06:20	04/16/21 17:22	
410-36330-4	Column Influent-041421	Water	04/14/21 06:25	04/16/21 17:22	
410-36330-5	Column Effluent-041621	Water	04/16/21 08:25	04/16/21 17:22	
410-36330-6	Column Influent-041621	Water	04/16/21 08:30	04/16/21 17:22	
410-36330-7	Trip Blank	Water	04/12/21 00:00	04/16/21 17:22	

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

May 24, 2021

ENV Subcontracting
Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Certificate of Analysis

Project Name:	**2020-WET CHEM PRICING**	Workorder:	**3170487**
Purchase Order:		Workorder ID:	**410-36330-1**

Dear ENV Subcontracting:

Enclosed are the analytical results for samples received by the laboratory on Monday, April 19, 2021.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3170487 410-36330-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3170487001	410-36330-1	Water	4/12/2021 09:50	4/19/2021 11:04	Collected by Client
3170487002	410-36330-2	Water	4/12/2021 09:55	4/19/2021 11:04	Collected by Client
3170487003	410-36330-3	Water	4/14/2021 06:20	4/19/2021 11:04	Collected by Client
3170487004	410-36330-4	Water	4/14/2021 06:25	4/19/2021 11:04	Collected by Client
3170487005	410-36330-5	Water	4/16/2021 08:25	4/19/2021 11:04	Collected by Client
3170487006	410-36330-6	Water	4/16/2021 08:30	4/19/2021 11:04	Collected by Client

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SAMPLE SUMMARY

Workorder: 3170487 410-36330-1

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3170487 410-36330-1

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

Lab ID: **3170487001** Date Collected: 4/12/2021 09:50 Matrix: Water
Sample ID: **410-36330-1** Date Received: 4/19/2021 11:04

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	S5550B-10			5/24/21 10:15	MBS	D
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SM5310B-2011			5/3/21 20:18	PAG	A

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

Lab ID: **3170487002** Date Collected: 4/12/2021 09:55 Matrix: Water
Sample ID: **410-36330-2** Date Received: 4/19/2021 11:04

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	S5550B-10			5/24/21 10:15	MBS	D
Total Organic Carbon (TOC)	0.82	C	mg/L	0.50	SM5310B-2011			5/3/21 20:18	PAG	A

Ms. Sarah S Leung
Project Coordinator

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

Lab ID: **3170487003** Date Collected: 4/14/2021 06:20 Matrix: Water
Sample ID: **410-36330-3** Date Received: 4/19/2021 11:04

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	S5550B-10			5/24/21 10:15	MBS	D
Total Organic Carbon (TOC)	0.85	C	mg/L	0.50	SM5310B-2011			5/3/21 20:18	PAG	A

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

Lab ID: **3170487004** Date Collected: 4/14/2021 06:25 Matrix: Water
Sample ID: **410-36330-4** Date Received: 4/19/2021 11:04

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	S5550B-10			5/24/21 10:15	MBS	D
Total Organic Carbon (TOC)	0.91	C	mg/L	0.50	SM5310B-2011			5/3/21 20:18	PAG	A

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

Lab ID: **3170487005** Date Collected: 4/16/2021 08:25 Matrix: Water
Sample ID: **410-36330-5** Date Received: 4/19/2021 11:04

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	S5550B-10			5/24/21 10:15	MBS	D
Total Organic Carbon (TOC)	0.73	C	mg/L	0.50	SM5310B-2011			5/3/21 20:18	PAG	A

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

Lab ID: **3170487006** Date Collected: 4/16/2021 08:30 Matrix: Water
Sample ID: **410-36330-6** Date Received: 4/19/2021 11:04

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	S5550B-10			5/24/21 10:15	MBS	D
Total Organic Carbon (TOC)	0.83	C	mg/L	0.50	SM5310B-2011			5/3/21 20:18	PAG	A

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3170487 410-36330-1

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3170487001	1	410-36330-1	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3170487002	1	410-36330-2	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3170487003	1	410-36330-3	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3170487004	1	410-36330-4	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3170487005	1	410-36330-5	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3170487006	1	410-36330-6	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3170487 410-36330-1

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3170487001	410-36330-1	S5550B-10		
3170487001	410-36330-1	SM5310B-2011		
3170487002	410-36330-2	S5550B-10		
3170487002	410-36330-2	SM5310B-2011		
3170487003	410-36330-3	S5550B-10		
3170487003	410-36330-3	SM5310B-2011		
3170487004	410-36330-4	S5550B-10		
3170487004	410-36330-4	SM5310B-2011		
3170487005	410-36330-5	S5550B-10		
3170487005	410-36330-5	SM5310B-2011		
3170487006	410-36330-6	S5550B-10		
3170487006	410-36330-6	SM5310B-2011		

Chain of Custody Record

3170487

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cottman, Hannah L		COC No: 410-633389.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Hannah.Cottman@eurofinset.com	State of Origin: Maryland	Page: Page 1 of 1
Company: ALS Environmental		Accreditations Required (See note): State - Maryland		Job #: 410-36330-1
Address: 301 Fulling Mill Road,	Due Date Requested: 5/7/2021			
City: Middletown	TAT Requested (days):			
State, Zip: PA, 17057				
Phone:	PO #:			
Email:	WO #:			
Project Name: Former Kop-Flex Facility Site	Project #: 41001602			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Low Level TOC)/ EPA 5310C	SUB (Tannins and Lignins)/ 5550B	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Column Effluent (410-36330-1)	4/12/21	09:50 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent (410-36330-2)	4/12/21	09:55 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Effluent-041421 (410-36330-3)	4/14/21	06:20 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-041421 (410-36330-4)	4/14/21	06:25 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Effluent-041621 (410-36330-5)	4/16/21	08:25 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-041621 (410-36330-6)	4/16/21	08:30 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format

> 3°C 5 7+4

each sample has 3 vials and 1 x 250mL AN.UNP w/HCl

AKM 4/19/2020

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Env places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Lancaster Laboratories Env laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Env attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Lancaster Laboratories Env.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/17/21 1414	Company ECLE

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

received by [illegible] 4/19/21 1014
relinquished by [illegible] 4/19/21 1104

Ver: 11/01/2020

301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

3170487

Eurofins Lancaster Laboratories Environmental, LLC

n of Sample Receipt Form

Client: Work O Initials: ALM Date: 4/19/2021

1. Were airbills / tracking numbers present and recorded?	NONE	YES	NO
Tracking number:			
2. Are Custody Seals on shipping containers intact?	NONE	YES	NO
3. Are Custody Seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present?		YES	NO
5. Are the COC and bottle labels complete, legible and in agreement? See below		YES	NO
5a. Does the COC contain sample locations?		YES	NO
5b. Does the COC contain date and time of sample collection for all samples?		YES	NO
5c. Does the COC contain sample collectors name? client added		YES	NO
5d. Does the COC note the type(s) of preservation for all bottles?		YES	NO
5e. Does the COC note the number of bottles submitted for each sample? added		YES	NO
5f. Does the COC note the type of sample, composite or grab?		YES	NO
5g. Does the COC note the matrix of the sample(s)?		YES	NO
6. Are all aqueous samples requiring preservation preserved correctly?[1]	N/A	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		YES	NO
8. Are all samples within holding times for the requested analyses?		YES	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		YES	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	N/A	YES	NO
11. Were the samples received on ice?		YES	NO
12. Were sample temperatures measured at 0.0-6.0°C		YES	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	NO
13a. Are the samples required for SDWA compliance reporting?	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	N/A	YES	NO

Cooler #: All 3 days

Temperature (°C): 3

Thermometer ID: 574

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

[1]Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

Chain of Custody Record

eurofins Environment Testing America

410-36330 Chain of Custody

Client Information	Sampler: Shannon Burke	Lab PM: Cottman, Hannah L	No: 18548-3588.1
Client Contact: Eric Johnson	Phone: 717-512-4559	E-Mail: Hannah.Cottman@eurofinset.com	State: Maryland	Page: Page 1 of 1
Company: WSP USA Corp	PWSID: NA	Analysis Requested	Job #:
Address:	Due Date Requested:		Preservation Codes:
City: Herndon	TAT Requested (days): Standard		A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
State, Zip: VA, 20171	Compliance Project: Δ Yes Δ No		
Phone: 703-318-3936(Tel)	PO #: 31401545.010		
Email: eric.johnson@wsp.com	WO #:		Other:
Project Name: Former Kop-Flex Facility Site	Project #: 41001602		
Site:	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	624.1_PREC, 8260C, 8260C_SIM_14DX	5310C - Low Level TOC	5550B - Tannins and Lignin	Total Number of containers	Special Instructions/Note:
			Preservation Code:			A	A	N		
Column Effluent	4/12/21	0950	G	W		X	X	X		
Column Influent	4/12/21	0955	G	W		X	X	X		
Column Effluent-041421	4/14/21	0620	G	W			X	X		
Column Influent-041421	4/14/21	0625	G	W			X	X		
Column Effluent-041621	4-16-21	0825	G	W			X	X		
Column Influent-041621	4-16-21	0830	G	W			X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	4/9/21 1434			4/12/21 0900	WSP
	4-16-21 1050	S&S Tech		4/16/21 10:50	Eurofins
	4/16/21 16:41			4-16-21 1722	Eurofins

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver 01/16/2019

Login Sample Receipt Checklist

Client: WSP USA Corp.

Job Number: 410-36330-1

Login Number: 36330

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Rivera-Santa, Julissa

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-37198-1
Client Project/Site: Former Kop-Flex Facility Site

For:
WSP USA Corp.
Attn: Environmental Accounts Payable
13530 Dulles Technology Drive
Suite 300
Herndon, Virginia 20171

Attn: Eric Johnson

Authorized for release by:
5/24/2021 2:48:21 PM

Hannah Cottman, Operations Support Specialist
(717)556-7383
Hannah.Cottman@eurofinset.com

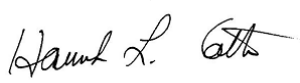
Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Hannah Cottman
Operations Support Specialist
5/24/2021 2:48:21 PM

Table of Contents

Definitions/Glossary

Client: WSP USA Corp. Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-37198-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-37198-1

Receipt
The samples were received on 4/23/2021 5:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

Receipt Exceptions
A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

SUBCONTRACTING

The following analyses were subcontracted to ALS Environmental:
Low Level TOC
Tannins and Lignins

GC/MS VOA
Method 8260C: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): Trip Blank (410-37198-7). The sample container was received with headspace.

Method 8260C: The continuing calibration verification (CCV) associated with batch 410-120259 recovered outside acceptance criteria, low biased, for Chloromethane and Dichlorodifluoromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Subcontract Lab non-Sister Lab
See attached subcontract report.

Detection Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-37198-1

Client Sample ID: Column Effluent-041921 — Lab Sample ID: 410-37198-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	86		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	69		1.0	0.30	ug/L	1		8260C	Total/NA
1,1,2-Trichloroethane	0.63	J	1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	220		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	6.8		1.0	0.30	ug/L	1		8260C	Total/NA
2-Butanone	3.9	J	10	0.30	ug/L	1		8260C	Total/NA
Chloroethane	32		1.0	0.20	ug/L	1		8260C	Total/NA
Chloroform	1.0		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	6.9		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	3.5		1.0	0.20	ug/L	1		8260C	Total/NA
Methylene Chloride	2.9		1.0	0.30	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.23	J	1.0	0.20	ug/L	1		8260C	Total/NA
Trichloroethene	1.9		1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	2.3		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene - DL	540		10	2.0	ug/L	10		8260C	Total/NA

Client Sample ID: Column Influent-041921 — Lab Sample ID: 410-37198-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	87		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	110		1.0	0.30	ug/L	1		8260C	Total/NA
1,1,2-Trichloroethane	0.70	J	1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	7.2		1.0	0.30	ug/L	1		8260C	Total/NA
Chloroethane	48		1.0	0.20	ug/L	1		8260C	Total/NA
Chloroform	1.6		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	11		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	2.6		1.0	0.20	ug/L	1		8260C	Total/NA
Methylene Chloride	3.5		1.0	0.30	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.32	J	1.0	0.20	ug/L	1		8260C	Total/NA
Trichloroethene	4.7		1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	4.3		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethane - DL	290		10	2.0	ug/L	10		8260C	Total/NA
1,1-Dichloroethene - DL	1100		10	2.0	ug/L	10		8260C	Total/NA

Client Sample ID: Column Effluent-042121 — Lab Sample ID: 410-37198-3

No Detections.

Client Sample ID: Column Influent-042121 — Lab Sample ID: 410-37198-4

No Detections.

Client Sample ID: Column Effluent-042321 — Lab Sample ID: 410-37198-5

No Detections.

Client Sample ID: Column Influent-042321 — Lab Sample ID: 410-37198-6

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 410-37198-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-37198-1

Client Sample ID: Column Effluent-041921

Lab Sample ID: 410-37198-1

Date Collected: 04/19/21 08:00

Matrix: Water

Date Received: 04/23/21 17:49

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**86**		4.0	1.7	ug/L			04/29/21 13:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*04/29/21 13:44*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**69**		1.0	0.30	ug/L			04/29/21 01:13	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
1,1,2-Trichloroethane	**0.63**	**J**	1.0	0.20	ug/L			04/29/21 01:13	1
1,1-Dichloroethane	**220**		1.0	0.20	ug/L			04/29/21 01:13	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/29/21 01:13	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/29/21 01:13	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/29/21 01:13	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
1,2-Dichloroethane	**6.8**		1.0	0.30	ug/L			04/29/21 01:13	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
2-Butanone	**3.9**	**J**	10	0.30	ug/L			04/29/21 01:13	1
2-Hexanone	<0.30		10	0.30	ug/L			04/29/21 01:13	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/29/21 01:13	1
Acetone	<0.70		20	0.70	ug/L			04/29/21 01:13	1
Benzene	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Bromoform	<1.0		4.0	1.0	ug/L			04/29/21 01:13	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/29/21 01:13	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Chloroethane	**32**		1.0	0.20	ug/L			04/29/21 01:13	1
Chloroform	**1.0**		1.0	0.20	ug/L			04/29/21 01:13	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
cis-1,2-Dichloroethene	**6.9**		1.0	0.20	ug/L			04/29/21 01:13	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/29/21 01:13	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/29/21 01:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/29/21 01:13	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/29/21 01:13	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/29/21 01:13	1
Methyl tertiary butyl ether	**3.5**		1.0	0.20	ug/L			04/29/21 01:13	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/29/21 01:13	1
Methylene Chloride	**2.9**		1.0	0.30	ug/L			04/29/21 01:13	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/29/21 01:13	1
o-Xylene	<0.40		1.0	0.40	ug/L			04/29/21 01:13	1

Client Sample ID: Column Effluent-041921
Lab Sample ID: 410-37198-1
Date Collected: 04/19/21 08:00
Matrix: Water
Date Received: 04/23/21 17:49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	<0.20		5.0	0.20	ug/L			04/29/21 01:13	1
Tetrachloroethene	**0.23**	**J**	1.0	0.20	ug/L			04/29/21 01:13	1
Toluene	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Trichloroethene	**1.9**		1.0	0.20	ug/L			04/29/21 01:13	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:13	1
Vinyl chloride	**2.3**		1.0	0.20	ug/L			04/29/21 01:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*04/29/21 01:13*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/29/21 01:13*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*04/29/21 01:13*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/29/21 01:13*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	**540**		10	2.0	ug/L			05/03/21 13:36	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*05/03/21 13:36*	*10*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/03/21 13:36*	*10*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*05/03/21 13:36*	*10*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/03/21 13:36*	*10*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-37198-1

Client Sample ID: Column Influent-041921

Lab Sample ID: 410-37198-2

Date Collected: 04/19/21 08:05

Matrix: Water

Date Received: 04/23/21 17:49

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**87**		4.0	1.7	ug/L			04/29/21 14:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/21 14:04*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**110**		1.0	0.30	ug/L			04/29/21 01:35	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
1,1,2-Trichloroethane	**0.70**	**J**	1.0	0.20	ug/L			04/29/21 01:35	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/29/21 01:35	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/29/21 01:35	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/29/21 01:35	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1
1,2-Dichloroethane	**7.2**		1.0	0.30	ug/L			04/29/21 01:35	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1
2-Butanone	<0.30		10	0.30	ug/L			04/29/21 01:35	1
2-Hexanone	<0.30		10	0.30	ug/L			04/29/21 01:35	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/29/21 01:35	1
Acetone	<0.70		20	0.70	ug/L			04/29/21 01:35	1
Benzene	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Bromoform	<1.0		4.0	1.0	ug/L			04/29/21 01:35	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/29/21 01:35	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Chloroethane	**48**		1.0	0.20	ug/L			04/29/21 01:35	1
Chloroform	**1.6**		1.0	0.20	ug/L			04/29/21 01:35	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
cis-1,2-Dichloroethene	**11**		1.0	0.20	ug/L			04/29/21 01:35	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/29/21 01:35	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/29/21 01:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/29/21 01:35	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/29/21 01:35	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/29/21 01:35	1
Methyl tertiary butyl ether	**2.6**		1.0	0.20	ug/L			04/29/21 01:35	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/29/21 01:35	1
Methylene Chloride	**3.5**		1.0	0.30	ug/L			04/29/21 01:35	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/29/21 01:35	1
o-Xylene	<0.40		1.0	0.40	ug/L			04/29/21 01:35	1
Styrene	<0.20		5.0	0.20	ug/L			04/29/21 01:35	1

Client: WSP USA Corp.
Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Influent-041921
Lab Sample ID: 410-37198-2
Date Collected: 04/19/21 08:05
Matrix: Water
Date Received: 04/23/21 17:49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	**0.32**	**J**	1.0	0.20	ug/L			04/29/21 01:35	1
Toluene	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Trichloroethene	**4.7**		1.0	0.20	ug/L			04/29/21 01:35	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/29/21 01:35	1
Vinyl chloride	**4.3**		1.0	0.20	ug/L			04/29/21 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*04/29/21 01:35*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/29/21 01:35*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*04/29/21 01:35*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/29/21 01:35*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**290**		10	2.0	ug/L			04/30/21 10:26	10
1,1-Dichloroethene	**1100**		10	2.0	ug/L			04/30/21 10:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*04/30/21 10:26*	*10*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*04/30/21 10:26*	*10*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*04/30/21 10:26*	*10*
Toluene-d8 (Surr)	*98*		*80 - 120*		*04/30/21 10:26*	*10*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-37198-1

Client Sample ID: Trip Blank

Date Collected: 04/19/21 00:00
Date Received: 04/23/21 17:49

Lab Sample ID: 410-37198-7

Matrix: Water

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			04/29/21 13:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/21 13:03*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			04/29/21 00:06	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/29/21 00:06	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/29/21 00:06	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/29/21 00:06	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			04/29/21 00:06	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
2-Butanone	<0.30		10	0.30	ug/L			04/29/21 00:06	1
2-Hexanone	<0.30		10	0.30	ug/L			04/29/21 00:06	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/29/21 00:06	1
Acetone	<0.70		20	0.70	ug/L			04/29/21 00:06	1
Benzene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Bromoform	<1.0		4.0	1.0	ug/L			04/29/21 00:06	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/29/21 00:06	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Chloroethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Chloroform	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/29/21 00:06	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/29/21 00:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/29/21 00:06	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/29/21 00:06	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/29/21 00:06	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/29/21 00:06	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/29/21 00:06	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/29/21 00:06	1

Client Sample ID: Trip Blank
Lab Sample ID: 410-37198-7
Date Collected: 04/19/21 00:00
Matrix: Water
Date Received: 04/23/21 17:49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			04/29/21 00:06	1
Styrene	<0.20		5.0	0.20	ug/L			04/29/21 00:06	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Toluene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Trichloroethene	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/29/21 00:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*04/29/21 00:06*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/29/21 00:06*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*04/29/21 00:06*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/29/21 00:06*	*1*

Action Limit Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-37198-1

Client Sample ID: Column Effluent-041921

Lab Sample ID: 410-37198-1

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	69		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	0.63	J	ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	**220**		ug/L	**90**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	**6.8**		ug/L	**5**	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	3.9	J	ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**32**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	1.0		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	6.9		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	3.5		ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	0.23	J	ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	1.9		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	**2.3**		ug/L	**2**	1.0	8260C	Total/NA
1,1-Dichloroethene - DL	**540**		ug/L	**7**	10	8260C	Total/NA

Client Sample ID: Column Influent-041921

Lab Sample ID: 410-37198-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	110		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	0.70	J	ug/L	5	1.0	8260C	Total/NA

Client Sample ID: Column Influent-041921 (Continued)
Lab Sample ID: 410-37198-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	**7.2**		ug/L	**5**	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**48**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	1.6		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	11		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	2.6		ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	0.32	J	ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	4.7		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	**4.3**		ug/L	**2**	1.0	8260C	Total/NA
1,1-Dichloroethane - DL	**290**		ug/L	**90**	10	8260C	Total/NA
1,1-Dichloroethene - DL	**1100**		ug/L	**7**	10	8260C	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 410-37198-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	<0.30		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	<0.20		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	<0.20		ug/L	7	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA

Client Sample ID: Trip Blank (Continued)

Lab Sample ID: 410-37198-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	<0.30		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	<0.20		ug/L	3.6	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	<0.20		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	<0.20		ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	<0.20		ug/L	2	1.0	8260C	Total/NA

Surrogate Summary

Client: WSP USA Corp.
Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-37198-1	Column Effluent-041921	100	96	95	100
410-37198-1 - DL	Column Effluent-041921	99	98	96	100
410-37198-2	Column Influent-041921	102	96	95	100
410-37198-2 - DL	Column Influent-041921	103	93	94	98
410-37198-7	Trip Blank	99	96	93	99
LCS 410-120259/4	Lab Control Sample	101	97	93	100
LCS 410-120839/4	Lab Control Sample	101	98	93	100
LCS 410-121563/4	Lab Control Sample	100	98	93	102
LCSD 410-120259/5	Lab Control Sample Dup	101	97	93	100
LCSD 410-120839/5	Lab Control Sample Dup	101	96	93	100
MB 410-120259/7	Method Blank	100	96	94	99
MB 410-120839/7	Method Blank	103	96	94	100
MB 410-121563/6	Method Blank	101	95	94	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TOL
Lab Sample ID	Client Sample ID	(80-120)
410-37198-1	Column Effluent-041921	91
410-37198-2	Column Influent-041921	90
410-37198-7	Trip Blank	90
LCS 410-120375/4	Lab Control Sample	91
LCSD 410-120375/5	Lab Control Sample Dup	91
MB 410-120375/7	Method Blank	91

Surrogate Legend

TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-120259/7
Matrix: Water
Analysis Batch: 120259

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			04/28/21 23:38	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/28/21 23:38	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/28/21 23:38	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/28/21 23:38	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			04/28/21 23:38	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
2-Butanone	<0.30		10	0.30	ug/L			04/28/21 23:38	1
2-Hexanone	<0.30		10	0.30	ug/L			04/28/21 23:38	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/28/21 23:38	1
Acetone	<0.70		20	0.70	ug/L			04/28/21 23:38	1
Benzene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Bromoform	<1.0		4.0	1.0	ug/L			04/28/21 23:38	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/28/21 23:38	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Chloroethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Chloroform	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/28/21 23:38	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/28/21 23:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/28/21 23:38	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/28/21 23:38	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/28/21 23:38	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/28/21 23:38	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/28/21 23:38	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/28/21 23:38	1
o-Xylene	<0.40		1.0	0.40	ug/L			04/28/21 23:38	1
Styrene	<0.20		5.0	0.20	ug/L			04/28/21 23:38	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Toluene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-120259/7
Matrix: Water
Analysis Batch: 120259

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Trichloroethene	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/28/21 23:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*04/28/21 23:38*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/28/21 23:38*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*04/28/21 23:38*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/28/21 23:38*	*1*

Lab Sample ID: LCS 410-120259/4
Matrix: Water
Analysis Batch: 120259

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	16.7		ug/L		83	67 - 126
1,1,2,2-Tetrachloroethane	20.0	20.2		ug/L		101	72 - 120
1,1,2-Trichloroethane	20.0	18.8		ug/L		94	80 - 120
1,1-Dichloroethane	20.0	17.0		ug/L		85	80 - 120
1,1-Dichloroethene	20.0	19.7		ug/L		99	80 - 131
1,2,3-Trichlorobenzene	20.0	17.8		ug/L		89	66 - 120
1,2,4-Trichlorobenzene	20.0	17.4		ug/L		87	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	18.8		ug/L		94	47 - 131
1,2-Dibromoethane	20.0	18.2		ug/L		91	77 - 120
1,2-Dichlorobenzene	20.0	18.3		ug/L		92	80 - 120
1,2-Dichloroethane	20.0	16.2		ug/L		81	73 - 124
1,2-Dichloropropane	20.0	17.5		ug/L		88	80 - 120
1,3-Dichlorobenzene	20.0	18.4		ug/L		92	80 - 120
1,4-Dichlorobenzene	20.0	18.2		ug/L		91	80 - 120
2-Butanone	150	139		ug/L		93	59 - 135
2-Hexanone	100	91.0		ug/L		91	56 - 135
4-Methyl-2-pentanone	100	87.4		ug/L		87	62 - 133
Acetone	150	140		ug/L		93	54 - 157
Benzene	20.0	18.2		ug/L		91	80 - 120
Bromochloromethane	20.0	17.6		ug/L		88	80 - 120
Bromodichloromethane	20.0	16.9		ug/L		84	71 - 120
Bromoform	20.0	16.3		ug/L		82	51 - 120
Bromomethane	20.0	18.8		ug/L		94	53 - 128
Carbon disulfide	20.0	20.1		ug/L		100	65 - 128
Carbon tetrachloride	20.0	16.1		ug/L		81	64 - 134
Chlorobenzene	20.0	18.5		ug/L		92	80 - 120
Chloroethane	20.0	17.9		ug/L		89	55 - 123
Chloroform	20.0	17.2		ug/L		86	80 - 120
Chloromethane	20.0	16.9		ug/L		85	56 - 121
cis-1,2-Dichloroethene	20.0	18.3		ug/L		91	80 - 125
cis-1,3-Dichloropropene	20.0	17.5		ug/L		88	75 - 120
Cyclohexane	20.0	17.8		ug/L		89	68 - 126

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-120259/4
Matrix: Water
Analysis Batch: 120259

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	20.0	17.6		ug/L		88	71 - 120
Dichlorodifluoromethane	20.0	17.2		ug/L		86	41 - 127
Ethylbenzene	20.0	18.1		ug/L		91	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	19.0		ug/L		95	73 - 139
Isopropylbenzene	20.0	17.3		ug/L		87	80 - 120
m&p-Xylene	40.0	35.9		ug/L		90	80 - 120
Methyl acetate	20.0	17.8		ug/L		89	54 - 136
Methyl tertiary butyl ether	20.0	18.0		ug/L		90	69 - 122
Methylcyclohexane	20.0	16.7		ug/L		84	67 - 121
Methylene Chloride	20.0	19.3		ug/L		97	80 - 120
Naphthalene	20.0	19.2		ug/L		96	53 - 124
o-Xylene	20.0	17.9		ug/L		90	80 - 120
Styrene	20.0	18.0		ug/L		90	80 - 120
Tetrachloroethene	20.0	17.1		ug/L		85	80 - 120
Toluene	20.0	18.3		ug/L		91	80 - 120
trans-1,2-Dichloroethene	20.0	18.4		ug/L		92	80 - 126
trans-1,3-Dichloropropene	20.0	18.2		ug/L		91	67 - 120
Trichloroethene	20.0	17.8		ug/L		89	80 - 120
Trichlorofluoromethane	20.0	16.7		ug/L		84	55 - 135
Vinyl chloride	20.0	17.9		ug/L		89	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-120259/5
Matrix: Water
Analysis Batch: 120259

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	16.4		ug/L		82	67 - 126	2	30
1,1,2,2-Tetrachloroethane	20.0	20.7		ug/L		104	72 - 120	3	30
1,1,2-Trichloroethane	20.0	19.2		ug/L		96	80 - 120	2	30
1,1-Dichloroethane	20.0	17.3		ug/L		87	80 - 120	2	30
1,1-Dichloroethene	20.0	20.1		ug/L		101	80 - 131	2	30
1,2,3-Trichlorobenzene	20.0	18.1		ug/L		90	66 - 120	1	30
1,2,4-Trichlorobenzene	20.0	17.7		ug/L		89	63 - 120	2	30
1,2-Dibromo-3-Chloropropane	20.0	18.8		ug/L		94	47 - 131	0	30
1,2-Dibromoethane	20.0	18.7		ug/L		93	77 - 120	2	30
1,2-Dichlorobenzene	20.0	18.7		ug/L		94	80 - 120	2	30
1,2-Dichloroethane	20.0	16.9		ug/L		84	73 - 124	4	30
1,2-Dichloropropane	20.0	18.3		ug/L		91	80 - 120	4	30
1,3-Dichlorobenzene	20.0	18.6		ug/L		93	80 - 120	1	30
1,4-Dichlorobenzene	20.0	18.8		ug/L		94	80 - 120	3	30
2-Butanone	150	141		ug/L		94	59 - 135	2	30
2-Hexanone	100	93.4		ug/L		93	56 - 135	3	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-120259/5
Matrix: Water
Analysis Batch: 120259

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone			100	89.5		ug/L		90	62 - 133	2	30
Acetone			150	141		ug/L		94	54 - 157	1	30
Benzene			20.0	18.3		ug/L		91	80 - 120	0	30
Bromochloromethane			20.0	17.5		ug/L		87	80 - 120	1	30
Bromodichloromethane			20.0	17.4		ug/L		87	71 - 120	3	30
Bromoform			20.0	16.7		ug/L		84	51 - 120	3	30
Bromomethane			20.0	18.8		ug/L		94	53 - 128	0	30
Carbon disulfide			20.0	20.0		ug/L		100	65 - 128	0	30
Carbon tetrachloride			20.0	16.2		ug/L		81	64 - 134	0	30
Chlorobenzene			20.0	18.7		ug/L		94	80 - 120	1	30
Chloroethane			20.0	18.0		ug/L		90	55 - 123	1	30
Chloroform			20.0	17.5		ug/L		88	80 - 120	2	30
Chloromethane			20.0	16.2		ug/L		81	56 - 121	5	30
cis-1,2-Dichloroethene			20.0	18.6		ug/L		93	80 - 125	2	30
cis-1,3-Dichloropropene			20.0	18.0		ug/L		90	75 - 120	2	30
Cyclohexane			20.0	18.2		ug/L		91	68 - 126	2	30
Dibromochloromethane			20.0	17.7		ug/L		88	71 - 120	0	30
Dichlorodifluoromethane			20.0	17.4		ug/L		87	41 - 127	1	30
Ethylbenzene			20.0	18.2		ug/L		91	80 - 120	1	30
1,1,2-Trichloro-1,2,2-trifluoroethane			20.0	18.8		ug/L		94	73 - 139	1	30
Isopropylbenzene			20.0	17.5		ug/L		88	80 - 120	1	30
m&p-Xylene			40.0	36.9		ug/L		92	80 - 120	3	30
Methyl acetate			20.0	17.6		ug/L		88	54 - 136	1	30
Methyl tertiary butyl ether			20.0	18.2		ug/L		91	69 - 122	1	30
Methylcyclohexane			20.0	17.2		ug/L		86	67 - 121	3	30
Methylene Chloride			20.0	19.5		ug/L		97	80 - 120	1	30
Naphthalene			20.0	19.5		ug/L		98	53 - 124	1	30
o-Xylene			20.0	18.4		ug/L		92	80 - 120	2	30
Styrene			20.0	18.3		ug/L		91	80 - 120	2	30
Tetrachloroethene			20.0	17.4		ug/L		87	80 - 120	2	30
Toluene			20.0	18.7		ug/L		94	80 - 120	2	30
trans-1,2-Dichloroethene			20.0	18.4		ug/L		92	80 - 126	0	30
trans-1,3-Dichloropropene			20.0	18.5		ug/L		93	67 - 120	2	30
Trichloroethene			20.0	18.2		ug/L		91	80 - 120	2	30
Trichlorofluoromethane			20.0	16.4		ug/L		82	55 - 135	2	30
Vinyl chloride			20.0	17.8		ug/L		89	56 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-120839/7
Matrix: Water
Analysis Batch: 120839

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			04/30/21 01:23	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			04/30/21 01:23	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			04/30/21 01:23	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			04/30/21 01:23	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			04/30/21 01:23	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
2-Butanone	<0.30		10	0.30	ug/L			04/30/21 01:23	1
2-Hexanone	<0.30		10	0.30	ug/L			04/30/21 01:23	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			04/30/21 01:23	1
Acetone	<0.70		20	0.70	ug/L			04/30/21 01:23	1
Benzene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Bromoform	<1.0		4.0	1.0	ug/L			04/30/21 01:23	1
Bromomethane	<0.30		1.0	0.30	ug/L			04/30/21 01:23	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Chloroethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Chloroform	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Chloromethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Cyclohexane	<1.0		5.0	1.0	ug/L			04/30/21 01:23	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			04/30/21 01:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			04/30/21 01:23	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			04/30/21 01:23	1
Methyl acetate	<0.30		5.0	0.30	ug/L			04/30/21 01:23	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			04/30/21 01:23	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			04/30/21 01:23	1
Naphthalene	<1.0		5.0	1.0	ug/L			04/30/21 01:23	1
o-Xylene	<0.40		1.0	0.40	ug/L			04/30/21 01:23	1
Styrene	<0.20		5.0	0.20	ug/L			04/30/21 01:23	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Toluene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-120839/7
Matrix: Water
Analysis Batch: 120839

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Trichloroethene	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/30/21 01:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*04/30/21 01:23*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/30/21 01:23*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*04/30/21 01:23*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/30/21 01:23*	*1*

Lab Sample ID: LCS 410-120839/4
Matrix: Water
Analysis Batch: 120839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	16.5		ug/L		82	67 - 126
1,1,2,2-Tetrachloroethane	20.0	21.3		ug/L		106	72 - 120
1,1,2-Trichloroethane	20.0	19.6		ug/L		98	80 - 120
1,1-Dichloroethane	20.0	17.8		ug/L		89	80 - 120
1,1-Dichloroethene	20.0	19.1		ug/L		96	80 - 131
1,2,3-Trichlorobenzene	20.0	19.0		ug/L		95	66 - 120
1,2,4-Trichlorobenzene	20.0	18.5		ug/L		93	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	19.0		ug/L		95	47 - 131
1,2-Dibromoethane	20.0	18.8		ug/L		94	77 - 120
1,2-Dichlorobenzene	20.0	19.4		ug/L		97	80 - 120
1,2-Dichloroethane	20.0	16.7		ug/L		84	73 - 124
1,2-Dichloropropane	20.0	18.3		ug/L		91	80 - 120
1,3-Dichlorobenzene	20.0	19.2		ug/L		96	80 - 120
1,4-Dichlorobenzene	20.0	19.5		ug/L		98	80 - 120
2-Butanone	150	140		ug/L		93	59 - 135
2-Hexanone	100	92.6		ug/L		93	56 - 135
4-Methyl-2-pentanone	100	88.2		ug/L		88	62 - 133
Acetone	150	146		ug/L		97	54 - 157
Benzene	20.0	18.8		ug/L		94	80 - 120
Bromochloromethane	20.0	17.9		ug/L		89	80 - 120
Bromodichloromethane	20.0	17.4		ug/L		87	71 - 120
Bromoform	20.0	16.8		ug/L		84	51 - 120
Bromomethane	20.0	20.1		ug/L		101	53 - 128
Carbon disulfide	20.0	19.7		ug/L		98	65 - 128
Carbon tetrachloride	20.0	15.5		ug/L		78	64 - 134
Chlorobenzene	20.0	19.3		ug/L		96	80 - 120
Chloroethane	20.0	19.6		ug/L		98	55 - 123
Chloroform	20.0	17.7		ug/L		88	80 - 120
Chloromethane	20.0	18.7		ug/L		93	56 - 121
cis-1,2-Dichloroethene	20.0	19.2		ug/L		96	80 - 125
cis-1,3-Dichloropropene	20.0	18.2		ug/L		91	75 - 120
Cyclohexane	20.0	17.1		ug/L		86	68 - 126

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-120839/4
Matrix: Water
Analysis Batch: 120839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	20.0	17.9		ug/L		89	71 - 120
Dichlorodifluoromethane	20.0	18.4		ug/L		92	41 - 127
Ethylbenzene	20.0	18.5		ug/L		93	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	17.9		ug/L		90	73 - 139
Isopropylbenzene	20.0	17.7		ug/L		88	80 - 120
m&p-Xylene	40.0	37.4		ug/L		93	80 - 120
Methyl acetate	20.0	18.1		ug/L		91	54 - 136
Methyl tertiary butyl ether	20.0	18.4		ug/L		92	69 - 122
Methylcyclohexane	20.0	16.5		ug/L		83	67 - 121
Methylene Chloride	20.0	19.8		ug/L		99	80 - 120
Naphthalene	20.0	20.0		ug/L		100	53 - 124
o-Xylene	20.0	18.4		ug/L		92	80 - 120
Styrene	20.0	18.6		ug/L		93	80 - 120
Tetrachloroethene	20.0	17.1		ug/L		86	80 - 120
Toluene	20.0	19.2		ug/L		96	80 - 120
trans-1,2-Dichloroethene	20.0	18.5		ug/L		92	80 - 126
trans-1,3-Dichloropropene	20.0	18.5		ug/L		93	67 - 120
Trichloroethene	20.0	18.1		ug/L		90	80 - 120
Trichlorofluoromethane	20.0	16.2		ug/L		81	55 - 135
Vinyl chloride	20.0	19.4		ug/L		97	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-120839/5
Matrix: Water
Analysis Batch: 120839

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	15.9		ug/L		80	67 - 126	3	30
1,1,2,2-Tetrachloroethane	20.0	20.7		ug/L		104	72 - 120	3	30
1,1,2-Trichloroethane	20.0	19.0		ug/L		95	80 - 120	3	30
1,1-Dichloroethane	20.0	17.2		ug/L		86	80 - 120	3	30
1,1-Dichloroethene	20.0	18.9		ug/L		95	80 - 131	1	30
1,2,3-Trichlorobenzene	20.0	18.5		ug/L		93	66 - 120	2	30
1,2,4-Trichlorobenzene	20.0	18.1		ug/L		91	63 - 120	2	30
1,2-Dibromo-3-Chloropropane	20.0	19.1		ug/L		96	47 - 131	1	30
1,2-Dibromoethane	20.0	18.5		ug/L		92	77 - 120	2	30
1,2-Dichlorobenzene	20.0	19.2		ug/L		96	80 - 120	1	30
1,2-Dichloroethane	20.0	16.1		ug/L		80	73 - 124	4	30
1,2-Dichloropropane	20.0	17.7		ug/L		88	80 - 120	3	30
1,3-Dichlorobenzene	20.0	19.0		ug/L		95	80 - 120	1	30
1,4-Dichlorobenzene	20.0	19.0		ug/L		95	80 - 120	3	30
2-Butanone	150	139		ug/L		93	59 - 135	1	30
2-Hexanone	100	92.0		ug/L		92	56 - 135	1	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-120839/5
Matrix: Water
Analysis Batch: 120839

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone			100	87.5		ug/L		87	62 - 133	1	30
Acetone			150	140		ug/L		93	54 - 157	4	30
Benzene			20.0	18.2		ug/L		91	80 - 120	3	30
Bromochloromethane			20.0	17.5		ug/L		88	80 - 120	2	30
Bromodichloromethane			20.0	17.1		ug/L		85	71 - 120	2	30
Bromoform			20.0	16.4		ug/L		82	51 - 120	3	30
Bromomethane			20.0	19.4		ug/L		97	53 - 128	4	30
Carbon disulfide			20.0	19.3		ug/L		96	65 - 128	2	30
Carbon tetrachloride			20.0	15.7		ug/L		78	64 - 134	1	30
Chlorobenzene			20.0	18.5		ug/L		93	80 - 120	4	30
Chloroethane			20.0	18.2		ug/L		91	55 - 123	7	30
Chloroform			20.0	17.4		ug/L		87	80 - 120	2	30
Chloromethane			20.0	18.6		ug/L		93	56 - 121	0	30
cis-1,2-Dichloroethene			20.0	18.9		ug/L		94	80 - 125	2	30
cis-1,3-Dichloropropene			20.0	17.6		ug/L		88	75 - 120	3	30
Cyclohexane			20.0	16.7		ug/L		84	68 - 126	2	30
Dibromochloromethane			20.0	17.7		ug/L		88	71 - 120	1	30
Dichlorodifluoromethane			20.0	18.1		ug/L		91	41 - 127	1	30
Ethylbenzene			20.0	18.2		ug/L		91	80 - 120	2	30
1,1,2-Trichloro-1,2,2-trifluoroethane			20.0	17.3		ug/L		86	73 - 139	4	30
Isopropylbenzene			20.0	17.2		ug/L		86	80 - 120	3	30
m&p-Xylene			40.0	36.4		ug/L		91	80 - 120	3	30
Methyl acetate			20.0	17.8		ug/L		89	54 - 136	1	30
Methyl tertiary butyl ether			20.0	18.0		ug/L		90	69 - 122	2	30
Methylcyclohexane			20.0	16.0		ug/L		80	67 - 121	3	30
Methylene Chloride			20.0	19.5		ug/L		97	80 - 120	2	30
Naphthalene			20.0	19.6		ug/L		98	53 - 124	2	30
o-Xylene			20.0	18.3		ug/L		92	80 - 120	0	30
Styrene			20.0	18.3		ug/L		91	80 - 120	2	30
Tetrachloroethene			20.0	16.7		ug/L		83	80 - 120	3	30
Toluene			20.0	18.6		ug/L		93	80 - 120	3	30
trans-1,2-Dichloroethene			20.0	18.5		ug/L		93	80 - 126	0	30
trans-1,3-Dichloropropene			20.0	18.6		ug/L		93	67 - 120	0	30
Trichloroethene			20.0	17.5		ug/L		88	80 - 120	3	30
Trichlorofluoromethane			20.0	16.1		ug/L		81	55 - 135	0	30
Vinyl chloride			20.0	19.2		ug/L		96	56 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-121563/6
Matrix: Water
Analysis Batch: 121563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			05/03/21 09:54	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/03/21 09:54	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/03/21 09:54	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/03/21 09:54	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			05/03/21 09:54	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
2-Butanone	<0.30		10	0.30	ug/L			05/03/21 09:54	1
2-Hexanone	<0.30		10	0.30	ug/L			05/03/21 09:54	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/03/21 09:54	1
Acetone	<0.70		20	0.70	ug/L			05/03/21 09:54	1
Benzene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Bromoform	<1.0		4.0	1.0	ug/L			05/03/21 09:54	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/03/21 09:54	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Chloroethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Chloroform	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Chloromethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/03/21 09:54	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/03/21 09:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/03/21 09:54	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/03/21 09:54	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/03/21 09:54	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/03/21 09:54	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/03/21 09:54	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/03/21 09:54	1
o-Xylene	<0.40		1.0	0.40	ug/L			05/03/21 09:54	1
Styrene	<0.20		5.0	0.20	ug/L			05/03/21 09:54	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Toluene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-121563/6
Matrix: Water
Analysis Batch: 121563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Trichloroethene	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/03/21 09:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*05/03/21 09:54*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*05/03/21 09:54*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*05/03/21 09:54*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/03/21 09:54*	*1*

Lab Sample ID: LCS 410-121563/4
Matrix: Water
Analysis Batch: 121563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	18.3		ug/L		91	67 - 126
1,1,2,2-Tetrachloroethane	20.0	22.7		ug/L		113	72 - 120
1,1,2-Trichloroethane	20.0	20.9		ug/L		104	80 - 120
1,1-Dichloroethane	20.0	19.3		ug/L		96	80 - 120
1,1-Dichloroethene	20.0	22.0		ug/L		110	80 - 131
1,2,3-Trichlorobenzene	20.0	20.4		ug/L		102	66 - 120
1,2,4-Trichlorobenzene	20.0	20.0		ug/L		100	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	20.7		ug/L		104	47 - 131
1,2-Dibromoethane	20.0	20.0		ug/L		100	77 - 120
1,2-Dichlorobenzene	20.0	20.4		ug/L		102	80 - 120
1,2-Dichloroethane	20.0	17.6		ug/L		88	73 - 124
1,2-Dichloropropane	20.0	19.9		ug/L		99	80 - 120
1,3-Dichlorobenzene	20.0	20.7		ug/L		104	80 - 120
1,4-Dichlorobenzene	20.0	20.4		ug/L		102	80 - 120
2-Butanone	150	152		ug/L		101	59 - 135
2-Hexanone	100	100		ug/L		100	56 - 135
4-Methyl-2-pentanone	100	95.2		ug/L		95	62 - 133
Acetone	150	158		ug/L		105	54 - 157
Benzene	20.0	20.2		ug/L		101	80 - 120
Bromochloromethane	20.0	18.1		ug/L		91	80 - 120
Bromodichloromethane	20.0	19.0		ug/L		95	71 - 120
Bromoform	20.0	18.3		ug/L		91	51 - 120
Bromomethane	20.0	20.9		ug/L		104	53 - 128
Carbon disulfide	20.0	22.4		ug/L		112	65 - 128
Carbon tetrachloride	20.0	17.9		ug/L		89	64 - 134
Chlorobenzene	20.0	20.5		ug/L		103	80 - 120
Chloroethane	20.0	20.5		ug/L		102	55 - 123
Chloroform	20.0	18.8		ug/L		94	80 - 120
Chloromethane	20.0	19.1		ug/L		95	56 - 121
cis-1,2-Dichloroethene	20.0	20.6		ug/L		103	80 - 125
cis-1,3-Dichloropropene	20.0	19.8		ug/L		99	75 - 120
Cyclohexane	20.0	19.8		ug/L		99	68 - 126

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-121563/4
Matrix: Water
Analysis Batch: 121563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	20.0	19.4		ug/L		97	71 - 120
Dichlorodifluoromethane	20.0	18.1		ug/L		91	41 - 127
Ethylbenzene	20.0	20.5		ug/L		102	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	20.2		ug/L		101	73 - 139
Isopropylbenzene	20.0	19.7		ug/L		98	80 - 120
m&p-Xylene	40.0	40.9		ug/L		102	80 - 120
Methyl acetate	20.0	19.1		ug/L		96	54 - 136
Methyl tertiary butyl ether	20.0	19.1		ug/L		96	69 - 122
Methylcyclohexane	20.0	18.3		ug/L		92	67 - 121
Methylene Chloride	20.0	21.1		ug/L		105	80 - 120
Naphthalene	20.0	21.5		ug/L		108	53 - 124
o-Xylene	20.0	20.4		ug/L		102	80 - 120
Styrene	20.0	20.3		ug/L		101	80 - 120
Tetrachloroethene	20.0	19.0		ug/L		95	80 - 120
Toluene	20.0	20.9		ug/L		105	80 - 120
trans-1,2-Dichloroethene	20.0	20.8		ug/L		104	80 - 126
trans-1,3-Dichloropropene	20.0	20.6		ug/L		103	67 - 120
Trichloroethene	20.0	20.2		ug/L		101	80 - 120
Trichlorofluoromethane	20.0	17.6		ug/L		88	55 - 135
Vinyl chloride	20.0	20.6		ug/L		103	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-120375/7
Matrix: Water
Analysis Batch: 120375

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			04/29/21 12:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*04/29/21 12:26*	*1*

Lab Sample ID: LCS 410-120375/4
Matrix: Water
Analysis Batch: 120375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	4.81	4.65		ug/L		97	74 - 133

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-120375/4
Matrix: Water
Analysis Batch: 120375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*91*		*80 - 120*

Lab Sample ID: LCSD 410-120375/5
Matrix: Water
Analysis Batch: 120375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			4.81	4.45		ug/L		93	74 - 133	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	*91*		*80 - 120*

QC Association Summary

Client: WSP USA Corp.
Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

GC/MS VOA

Analysis Batch: 120259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37198-1	Column Effluent-041921	Total/NA	Water	8260C	
410-37198-2	Column Influent-041921	Total/NA	Water	8260C	
410-37198-7	Trip Blank	Total/NA	Water	8260C	
MB 410-120259/7	Method Blank	Total/NA	Water	8260C	
LCS 410-120259/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 410-120259/5	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 120375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37198-1	Column Effluent-041921	Total/NA	Water	8260C SIM 14D	
410-37198-2	Column Influent-041921	Total/NA	Water	8260C SIM 14D	
410-37198-7	Trip Blank	Total/NA	Water	8260C SIM 14D	
MB 410-120375/7	Method Blank	Total/NA	Water	8260C SIM 14D	
LCS 410-120375/4	Lab Control Sample	Total/NA	Water	8260C SIM 14D	
LCSD 410-120375/5	Lab Control Sample Dup	Total/NA	Water	8260C SIM 14D	

Analysis Batch: 120839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37198-2 - DL	Column Influent-041921	Total/NA	Water	8260C	
MB 410-120839/7	Method Blank	Total/NA	Water	8260C	
LCS 410-120839/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 410-120839/5	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 121563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37198-1 - DL	Column Effluent-041921	Total/NA	Water	8260C	
MB 410-121563/6	Method Blank	Total/NA	Water	8260C	
LCS 410-121563/4	Lab Control Sample	Total/NA	Water	8260C	

Lab Chronicle

Client: WSP USA Corp.
Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Effluent-041921
Lab Sample ID: 410-37198-1
Date Collected: 04/19/21 08:00
Matrix: Water
Date Received: 04/23/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	120259	04/29/21 01:13	ULCP	ELLE
Total/NA	Analysis	8260C	DL	10	121563	05/03/21 13:36	LCW8	ELLE
Total/NA	Analysis	8260C SIM 14D		10	120375	04/29/21 13:44	USEJ	ELLE

Client Sample ID: Column Influent-041921
Lab Sample ID: 410-37198-2
Date Collected: 04/19/21 08:05
Matrix: Water
Date Received: 04/23/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	120259	04/29/21 01:35	ULCP	ELLE
Total/NA	Analysis	8260C	DL	10	120839	04/30/21 10:26	URR2	ELLE
Total/NA	Analysis	8260C SIM 14D		10	120375	04/29/21 14:04	USEJ	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-37198-7
Date Collected: 04/19/21 00:00
Matrix: Water
Date Received: 04/23/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	120259	04/29/21 00:06	ULCP	ELLE
Total/NA	Analysis	8260C SIM 14D		1	120375	04/29/21 13:03	USEJ	ELLE

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: WSP USA Corp. Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	1,1,1-Trichloroethane
8260C		Water	1,1,2,2-Tetrachloroethane
8260C		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260C		Water	1,1,2-Trichloroethane
8260C		Water	1,1-Dichloroethane
8260C		Water	1,1-Dichloroethene
8260C		Water	1,2,3-Trichlorobenzene
8260C		Water	1,2,4-Trichlorobenzene
8260C		Water	1,2-Dibromo-3-Chloropropane
8260C		Water	1,2-Dibromoethane
8260C		Water	1,2-Dichlorobenzene
8260C		Water	1,2-Dichloroethane
8260C		Water	1,2-Dichloropropane
8260C		Water	1,3-Dichlorobenzene
8260C		Water	1,4-Dichlorobenzene
8260C		Water	2-Butanone
8260C		Water	2-Hexanone
8260C		Water	4-Methyl-2-pentanone
8260C		Water	Acetone
8260C		Water	Benzene
8260C		Water	Bromochloromethane
8260C		Water	Bromodichloromethane
8260C		Water	Bromoform
8260C		Water	Bromomethane
8260C		Water	Carbon disulfide
8260C		Water	Carbon tetrachloride
8260C		Water	Chlorobenzene
8260C		Water	Chloroethane
8260C		Water	Chloroform
8260C		Water	Chloromethane
8260C		Water	cis-1,2-Dichloroethene
8260C		Water	cis-1,3-Dichloropropene
8260C		Water	Cyclohexane
8260C		Water	Dibromochloromethane
8260C		Water	Dichlorodifluoromethane
8260C		Water	Ethylbenzene
8260C		Water	Isopropylbenzene
8260C		Water	m&p-Xylene
8260C		Water	Methyl acetate
8260C		Water	Methyl tertiary butyl ether
8260C		Water	Methylcyclohexane
8260C		Water	Methylene Chloride
8260C		Water	Naphthalene
8260C		Water	o-Xylene
8260C		Water	Styrene

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22
8260C	Water	Tetrachloroethene	
8260C	Water	Toluene	
8260C	Water	trans-1,2-Dichloroethene	
8260C	Water	trans-1,3-Dichloropropene	
8260C	Water	Trichloroethene	
8260C	Water	Trichlorofluoromethane	
8260C	Water	Vinyl chloride	
8260C SIM 14D	Water	1,4-Dioxane	

Method Summary

Client: WSP USA Corp.
Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C SIM 14D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
5310C	SM 5310C TOC	SM18	ALS MTown
5550B	SM 5550BTannins and Lignins	SM18	ALS MTown
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: WSP USA Corp.
Job ID: 410-37198-1
Project/Site: Former Kop-Flex Facility Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-37198-1	Column Effluent-041921	Water	04/19/21 08:00	04/23/21 17:49	
410-37198-2	Column Influent-041921	Water	04/19/21 08:05	04/23/21 17:49	
410-37198-3	Column Effluent-042121	Water	04/21/21 08:10	04/23/21 17:49	
410-37198-4	Column Influent-042121	Water	04/21/21 08:15	04/23/21 17:49	
410-37198-5	Column Effluent-042321	Water	04/23/21 09:50	04/23/21 17:49	
410-37198-6	Column Influent-042321	Water	04/23/21 09:55	04/23/21 17:49	
410-37198-7	Trip Blank	Water	04/19/21 00:00	04/23/21 17:49	

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

May 24, 2021

ENV Subcontracting
Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Certificate of Analysis

Project Name:	**2020-WET CHEM PRICING**	Workorder:	**3171839**
Purchase Order:		Workorder ID:	**410-37198-1**

Dear ENV Subcontracting:

Enclosed are the analytical results for samples received by the laboratory on Monday, April 26, 2021.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

SAMPLE SUMMARY

Workorder: 3171839 410-37198-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3171839001	Column Effluent-041921	Water	4/19/2021 08:00	4/26/2021 12:51	Collected by Client
3171839002	Column Influent-041921	Water	4/19/2021 08:05	4/26/2021 12:51	Collected by Client
3171839003	Column Effluent-042121	Water	4/21/2021 08:10	4/26/2021 12:51	Collected by Client
3171839004	Column Influent-042121	Water	4/21/2021 08:15	4/26/2021 12:51	Collected by Client
3171839005	Column Effluent-042321	Water	4/23/2021 09:50	4/26/2021 12:51	Collected by Client
3171839006	Column Influent-042321	Water	4/23/2021 09:55	4/26/2021 12:51	Collected by Client

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SAMPLE SUMMARY

Workorder: 3171839 410-37198-1

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3171839 410-37198-1

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

Lab ID: **3171839001** Date Collected: 4/19/2021 08:00 Matrix: Water
Sample ID: **Column Effluent-041921** Date Received: 4/26/2021 12:51

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY											
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10			5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.76	C	mg/L	0.50	0.18	SM5310B-2011			5/6/21 20:10	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

Lab ID: **3171839002** Date Collected: 4/19/2021 08:05 Matrix: Water
Sample ID: **Column Influent-041921** Date Received: 4/26/2021 12:51

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY											
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10			5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.94	C	mg/L	0.50	0.18	SM5310B-2011			5/6/21 04:03	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

Lab ID: **3171839003** Date Collected: 4/21/2021 08:10 Matrix: Water
Sample ID: **Column Effluent-042121** Date Received: 4/26/2021 12:51

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY											
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10			5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.68	C	mg/L	0.50	0.18	SM5310B-2011			5/6/21 04:03	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

Lab ID: **3171839004** Date Collected: 4/21/2021 08:15 Matrix: Water
Sample ID: **Column Influent-042121** Date Received: 4/26/2021 12:51

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY											
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10			5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.72	C	mg/L	0.50	0.18	SM5310B-2011			5/6/21 04:03	PAG	B

Ms. Sarah S Leung
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

Lab ID: **3171839005** Date Collected: 4/23/2021 09:50 Matrix: Water
Sample ID: **Column Effluent-042321** Date Received: 4/26/2021 12:51

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY											
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10			5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.72	C	mg/L	0.50	0.18	SM5310B-2011			5/6/21 04:03	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

Lab ID: **3171839006** Date Collected: 4/23/2021 09:55 Matrix: Water
Sample ID: **Column Influent-042321** Date Received: 4/26/2021 12:51

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY											
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10			5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.75	C	mg/L	0.50	0.18	SM5310B-2011			5/6/21 04:03	PAG	B

Ms. Sarah S Leung
Project Coordinator

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3171839 410-37198-1

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3171839001	1	Column Effluent-041921	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3171839002	1	Column Influent-041921	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3171839003	1	Column Effluent-042121	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3171839004	1	Column Influent-042121	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3171839005	1	Column Effluent-042321	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				
3171839006	1	Column Influent-042321	S5550B-10	Tannin and Lignin
The Tannin and Lignin analysis was analyzed outside of the 28 day holding time.				

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3171839 410-37198-1

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3171839001	Column Effluent-041921	S5550B-10		
3171839001	Column Effluent-041921	SM5310B-2011		
3171839002	Column Influent-041921	S5550B-10		
3171839002	Column Influent-041921	SM5310B-2011		
3171839003	Column Effluent-042121	S5550B-10		
3171839003	Column Effluent-042121	SM5310B-2011		
3171839004	Column Influent-042121	S5550B-10		
3171839004	Column Influent-042121	SM5310B-2011		
3171839005	Column Effluent-042321	S5550B-10		
3171839005	Column Effluent-042321	SM5310B-2011		
3171839006	Column Influent-042321	S5550B-10		
3171839006	Column Influent-042321	SM5310B-2011		

Chain of Custody Record

3171839

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cottman, Hannah L	OC No: 10-650615.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Hannah.Cottman@eurofinset.com	Page: Page 1 of 1
Company: ALS Environmental		Accreditations Required (See note): State - Maryland	Job #: 410-37198-1
Address: 301 Fulling Mill Road,	Due Date Requested: 5/14/2021		
City: Middletown	TAT Requested (days):		
State, Zip: PA, 17057			
Phone:	PO #:		
Email:	WO #:		
Project Name: Former Kop-Flex Facility Site	Project #: 41001602		
Site:	SSOW#:		

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Low Level TOC)/ EPA 5310C	SUB (Tannins and Lignins)/ 5550B	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Column Effluent-041921 (410-37198-1)	4/19/21	08:00 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-041921 (410-37198-2)	4/19/21	08:05 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Effluent-042121 (410-37198-3)	4/21/21	08:10 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-042121 (410-37198-4)	4/21/21	08:15 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Effluent-042321 (410-37198-5)	4/23/21	09:50 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-042321 (410-37198-6)	4/23/21	09:55 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format

> 3°C 573
> 6°C 573
> 4°C 573

each Sample has 1x 250mL AM amb and 3x40mL w/ HCl. RLB 4/26/2021

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Env places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Lancaster Laboratories Env laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Env attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Lancaster Laboratories Env.

Possible Hazard Identification 4°C 573 Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: Dawn Zeltt	Date/Time: 4-26-2021 1126	Company: ELLE	Received by: Hanna Wesner	Date/Time: 4/26/21 1212	Company: LL1
Relinquished by: Hanna Wesner	Date/Time: 4/26/21 12:57	Company: LL1	Received by: RLB/ALS	Date/Time: 4/26/2021 1251	Company: ALS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:
	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

3171839

Eurofins Lancaster Laboratories Environmental, LLC

...on of Sample Receipt Form

Client: Wor

Initials: AMB Date: 4/21/2021

1. Were airbills / tracking numbers present and recorded?	NONE	YES	NO
Tracking number:			
2. Are Custody Seals on shipping containers intact?	NONE	YES	NO
3. Are Custody Seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present?		YES	NO
5. Are the COC and bottle labels complete, legible and in agreement? See below		YES	NO
5a. Does the COC contain sample locations?		YES	NO
5b. Does the COC contain date and time of sample collection for all samples?		YES	NO
5c. Does the COC contain sample collectors name? Client added		YES	NO
5d. Does the COC note the type(s) of preservation for all bottles? added		YES	NO
5e. Does the COC note the number of bottles submitted for each sample? added		YES	NO
5f. Does the COC note the type of sample, composite or grab? no CG		YES	NO
5g. Does the COC note the matrix of the sample(s)?		YES	NO
6. Are all aqueous samples requiring preservation preserved correctly?[1]	N/A	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		YES	NO
8. Are all samples within holding times for the requested analyses?		YES	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		YES	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	N/A	YES	NO
11. Were the samples received on ice?		YES	NO
12. Were sample temperatures measured at 0.0-6.0°C		YES	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	NO
13a. Are the samples required for SDWA compliance reporting?	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	N/A	YES	NO

Cooler #:	4/20/21	4/21/21	4/23/21					
Temperature (°C):	3	6	4					
Thermometer ID:	573	573	573					

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

[1]Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

410-37198 Chain of Custody

Chain of Custody Record

eurofins Environment Testing America

Eric Johnson	Sampler: Dave Seaman	Lab PM: Cottman, Hannah L	Carrier Tracking No(s):	COC No: 410-18548-3588 1
	Phone: 410 299-3125	E-Mail: Hannah.Cottman@eurofinset.com	State of Origin: Maryland	Page: Page 1 of 1
Company: WSP USA Corp	PWSID: NA			Job #:

Address:	Due Date Requested:	
City: Herndon	TAT Requested (days): Standard	
State, Zip: VA, 20171	Compliance Project: Δ Yes Δ No	
Phone: 703-318-3936(Tel)	PO #: 31401545.010	
Email: eric.johnson@wsp.com	WO #:	
Project Name: Former Kop-Flex Facility Site	Project #: 41001602	
Site:	SSOW#:	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD	624.1_PREC, 8260C, 8260C_SIM_14DX	6310C - Low Level TOC	6550B - Tannins and Lignin	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	A	N		
Column Effluent - 041921	4/19/21	0800	G	W			X	X	X		
Column Influent - 041921	4/19/21	0805	G	W			X	X	X		
Column Effluent - 042121	4-21-21	0810	G	W				X	X		
Column Influent - 042121	4-21-21	0815	G	W				X	X		
Column Effluent - 042321	4-23-21	0950	G	W				X	X		
Column Influent - 042321	4-23-21	0955	G	W				X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 4-23-21 1130	Company: S&S Tech	Received by:	Date/Time: 4/23/21 11:30	Company:
Relinquished by:	Date/Time: 4/23/21 17:30	Company: ELE	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 4-23-21 1741	Company: ELE

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: WSP USA Corp.

Job Number: 410-37198-1

Login Number: 37198

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Rivera-Santa, Julissa

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-38011-1
Client Project/Site: Former Kop-Flex Facility Site

For:
WSP USA Corp.
Attn: Environmental Accounts Payable
13530 Dulles Technology Drive
Suite 300
Herndon, Virginia 20171

Attn: Eric Johnson

Authorized for release by:
5/24/2021 2:38:20 PM

Hannah Cottman, Operations Support Specialist
(717)556-7383
Hannah.Cottman@eurofinset.com

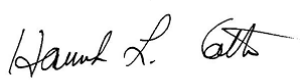
Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Hannah Cottman
Operations Support Specialist
5/24/2021 2:38:20 PM

Table of Contents

Definitions/Glossary

Client: WSP USA Corp. Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-38011-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-38011-1

Receipt
The samples were received on 4/30/2021 5:02 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.1°C

SUBCONTRACTING

The following analyses were subcontracted to ALS Environmental:
Low Level TOC
Tannins and Lignins

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Subcontract Lab non-Sister Lab
See attached subcontract report.

Detection Summary

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Effluent-042621 — Lab Sample ID: 410-38011-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	89		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	18		1.0	0.30	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	40		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	190		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	1.4		1.0	0.30	ug/L	1		8260C	Total/NA
Chloroethane	3.8		1.0	0.20	ug/L	1		8260C	Total/NA
Chloroform	0.22	J	1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.3		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	0.57	J	1.0	0.20	ug/L	1		8260C	Total/NA
Methylene Chloride	0.34	J	1.0	0.30	ug/L	1		8260C	Total/NA
Trichloroethene	0.91	J	1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	0.35	J	1.0	0.20	ug/L	1		8260C	Total/NA

Client Sample ID: Column Influent-042621 — Lab Sample ID: 410-38011-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	80		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	17		1.0	0.30	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	40		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	190		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	1.4		1.0	0.30	ug/L	1		8260C	Total/NA
Chloroethane	3.8		1.0	0.20	ug/L	1		8260C	Total/NA
Chloroform	0.22	J	1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.2		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	0.55	J	1.0	0.20	ug/L	1		8260C	Total/NA
Methylene Chloride	0.33	J	1.0	0.30	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.22	J	1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	0.38	J	1.0	0.20	ug/L	1		8260C	Total/NA

Client Sample ID: Column Effluent-042821 — Lab Sample ID: 410-38011-3

No Detections.

Client Sample ID: Column Influent-042821 — Lab Sample ID: 410-38011-4

No Detections.

Client Sample ID: Column Effluent-043021 — Lab Sample ID: 410-38011-5

No Detections.

Client Sample ID: Column Influent-043021 — Lab Sample ID: 410-38011-6

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 410-38011-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Client Sample ID: Column Effluent-042621
Date Collected: 04/26/21 09:10
Date Received: 04/30/21 17:02

Lab Sample ID: 410-38011-1
Matrix: Water

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**89**		4.0	1.7	ug/L			05/10/21 18:11	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/10/21 18:11*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**18**		1.0	0.30	ug/L			05/10/21 02:17	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
1,1-Dichloroethane	**40**		1.0	0.20	ug/L			05/10/21 02:17	1
1,1-Dichloroethene	**190**		1.0	0.20	ug/L			05/10/21 02:17	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/10/21 02:17	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/10/21 02:17	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/10/21 02:17	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
1,2-Dichloroethane	**1.4**		1.0	0.30	ug/L			05/10/21 02:17	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
2-Butanone	<0.30		10	0.30	ug/L			05/10/21 02:17	1
2-Hexanone	<0.30		10	0.30	ug/L			05/10/21 02:17	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/10/21 02:17	1
Acetone	<0.70		20	0.70	ug/L			05/10/21 02:17	1
Benzene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Bromoform	<1.0		4.0	1.0	ug/L			05/10/21 02:17	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/10/21 02:17	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Chloroethane	**3.8**		1.0	0.20	ug/L			05/10/21 02:17	1
Chloroform	**0.22**	**J**	1.0	0.20	ug/L			05/10/21 02:17	1
Chloromethane	<0.20	*+	1.0	0.20	ug/L			05/10/21 02:17	1
cis-1,2-Dichloroethene	**1.3**		1.0	0.20	ug/L			05/10/21 02:17	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/10/21 02:17	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/10/21 02:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/10/21 02:17	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/10/21 02:17	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/10/21 02:17	1
Methyl tertiary butyl ether	**0.57**	**J**	1.0	0.20	ug/L			05/10/21 02:17	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/10/21 02:17	1
Methylene Chloride	**0.34**	**J**	1.0	0.30	ug/L			05/10/21 02:17	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/10/21 02:17	1

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Client Sample ID: Column Effluent-042621
Date Collected: 04/26/21 09:10
Date Received: 04/30/21 17:02

Lab Sample ID: 410-38011-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			05/10/21 02:17	1
Styrene	<0.20		5.0	0.20	ug/L			05/10/21 02:17	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Toluene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Trichloroethene	**0.91**	**J**	1.0	0.20	ug/L			05/10/21 02:17	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:17	1
Vinyl chloride	**0.35**	**J**	1.0	0.20	ug/L			05/10/21 02:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*05/10/21 02:17*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/10/21 02:17*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*05/10/21 02:17*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/10/21 02:17*	*1*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Client Sample ID: Column Influent-042621
Date Collected: 04/26/21 09:20
Date Received: 04/30/21 17:02

Lab Sample ID: 410-38011-2
Matrix: Water

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**80**		4.0	1.7	ug/L			05/10/21 18:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/21 18:31*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**17**		1.0	0.30	ug/L			05/10/21 02:37	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
1,1-Dichloroethane	**40**		1.0	0.20	ug/L			05/10/21 02:37	1
1,1-Dichloroethene	**190**		1.0	0.20	ug/L			05/10/21 02:37	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/10/21 02:37	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/10/21 02:37	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/10/21 02:37	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
1,2-Dichloroethane	**1.4**		1.0	0.30	ug/L			05/10/21 02:37	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
2-Butanone	<0.30		10	0.30	ug/L			05/10/21 02:37	1
2-Hexanone	<0.30		10	0.30	ug/L			05/10/21 02:37	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/10/21 02:37	1
Acetone	<0.70		20	0.70	ug/L			05/10/21 02:37	1
Benzene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Bromoform	<1.0		4.0	1.0	ug/L			05/10/21 02:37	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/10/21 02:37	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Chloroethane	**3.8**		1.0	0.20	ug/L			05/10/21 02:37	1
Chloroform	**0.22**	**J**	1.0	0.20	ug/L			05/10/21 02:37	1
Chloromethane	<0.20	*+	1.0	0.20	ug/L			05/10/21 02:37	1
cis-1,2-Dichloroethene	**1.2**		1.0	0.20	ug/L			05/10/21 02:37	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/10/21 02:37	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/10/21 02:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/10/21 02:37	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/10/21 02:37	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/10/21 02:37	1
Methyl tertiary butyl ether	**0.55**	**J**	1.0	0.20	ug/L			05/10/21 02:37	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/10/21 02:37	1
Methylene Chloride	**0.33**	**J**	1.0	0.30	ug/L			05/10/21 02:37	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/10/21 02:37	1

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Client Sample ID: Column Influent-042621
Date Collected: 04/26/21 09:20
Date Received: 04/30/21 17:02

Lab Sample ID: 410-38011-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			05/10/21 02:37	1
Styrene	<0.20		5.0	0.20	ug/L			05/10/21 02:37	1
Tetrachloroethene	**0.22**	**J**	1.0	0.20	ug/L			05/10/21 02:37	1
Toluene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Trichloroethene	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/10/21 02:37	1
Vinyl chloride	**0.38**	**J**	1.0	0.20	ug/L			05/10/21 02:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*05/10/21 02:37*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*05/10/21 02:37*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*05/10/21 02:37*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/10/21 02:37*	*1*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Client Sample ID: Trip Blank

Lab Sample ID: 410-38011-7

Date Collected: 04/26/21 00:00

Matrix: Water

Date Received: 04/30/21 17:02

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			05/10/21 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/10/21 17:30*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			05/09/21 23:56	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/09/21 23:56	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/09/21 23:56	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/09/21 23:56	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			05/09/21 23:56	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
2-Butanone	<0.30		10	0.30	ug/L			05/09/21 23:56	1
2-Hexanone	<0.30		10	0.30	ug/L			05/09/21 23:56	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/09/21 23:56	1
Acetone	<0.70		20	0.70	ug/L			05/09/21 23:56	1
Benzene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Bromoform	<1.0		4.0	1.0	ug/L			05/09/21 23:56	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/09/21 23:56	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Chloroethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Chloroform	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Chloromethane	<0.20	*+	1.0	0.20	ug/L			05/09/21 23:56	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/09/21 23:56	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/09/21 23:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/09/21 23:56	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/09/21 23:56	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/09/21 23:56	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/09/21 23:56	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/09/21 23:56	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/09/21 23:56	1

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Trip Blank
Lab Sample ID: 410-38011-7
Date Collected: 04/26/21 00:00
Matrix: Water
Date Received: 04/30/21 17:02

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			05/09/21 23:56	1
Styrene	<0.20		5.0	0.20	ug/L			05/09/21 23:56	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Toluene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Trichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/09/21 23:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*05/09/21 23:56*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/09/21 23:56*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*05/09/21 23:56*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/09/21 23:56*	*1*

Action Limit Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Client Sample ID: Column Effluent-042621

Lab Sample ID: 410-38011-1

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	18		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	40		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	**190**		ug/L	**7**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	1.4		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**3.8**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	0.22	J	ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20	*+	ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	1.3		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	0.57	J	ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	0.91	J	ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	0.35	J	ug/L	2	1.0	8260C	Total/NA

Client Sample ID: Column Influent-042621

Lab Sample ID: 410-38011-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	17		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA

Client Sample ID: Column Influent-042621 (Continued)
Lab Sample ID: 410-38011-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1-Dichloroethane	40		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	**190**		ug/L	**7**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	1.4		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**3.8**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	0.22	J	ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20	*+	ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	1.2		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	0.55	J	ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	0.22	J	ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	0.38	J	ug/L	2	1.0	8260C	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 410-38011-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	<0.30		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	<0.20		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	<0.20		ug/L	7	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA

Action Limit Summary

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Trip Blank (Continued)
Lab Sample ID: 410-38011-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	<0.30		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	<0.20		ug/L	3.6	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20	*+	ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	<0.20		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	<0.20		ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	<0.20		ug/L	2	1.0	8260C	Total/NA

Surrogate Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-38011-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-38011-1	Column Effluent-042621	104	98	101	97
410-38011-2	Column Influent-042621	106	96	102	99
410-38011-7	Trip Blank	106	99	103	99
LCS 410-124185/4	Lab Control Sample	103	98	103	99
MB 410-124185/6	Method Blank	103	98	103	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		TOL
Lab Sample ID	Client Sample ID	(80-120)
410-38011-1	Column Effluent-042621	100
410-38011-2	Column Influent-042621	101
410-38011-7	Trip Blank	100
LCS 410-124390/1013	Lab Control Sample	100
LCSD 410-124390/14	Lab Control Sample Dup	100
MB 410-124390/16	Method Blank	100

Surrogate Legend

TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-124185/6
Matrix: Water
Analysis Batch: 124185

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			05/09/21 22:54	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/09/21 22:54	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/09/21 22:54	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/09/21 22:54	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			05/09/21 22:54	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
2-Butanone	<0.30		10	0.30	ug/L			05/09/21 22:54	1
2-Hexanone	<0.30		10	0.30	ug/L			05/09/21 22:54	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/09/21 22:54	1
Acetone	<0.70		20	0.70	ug/L			05/09/21 22:54	1
Benzene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Bromoform	<1.0		4.0	1.0	ug/L			05/09/21 22:54	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/09/21 22:54	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Chloroethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Chloroform	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Chloromethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/09/21 22:54	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/09/21 22:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/09/21 22:54	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/09/21 22:54	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/09/21 22:54	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/09/21 22:54	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/09/21 22:54	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/09/21 22:54	1
o-Xylene	<0.40		1.0	0.40	ug/L			05/09/21 22:54	1
Styrene	<0.20		5.0	0.20	ug/L			05/09/21 22:54	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Toluene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-124185/6
Matrix: Water
Analysis Batch: 124185

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Trichloroethene	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/09/21 22:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*05/09/21 22:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/09/21 22:54*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*05/09/21 22:54*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/09/21 22:54*	*1*

Lab Sample ID: LCS 410-124185/4
Matrix: Water
Analysis Batch: 124185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	20.0		ug/L		100	67 - 126
1,1,2,2-Tetrachloroethane	20.0	20.0		ug/L		100	72 - 120
1,1,2-Trichloroethane	20.0	19.5		ug/L		98	80 - 120
1,1-Dichloroethane	20.0	19.4		ug/L		97	80 - 120
1,1-Dichloroethene	20.0	19.9		ug/L		99	80 - 131
1,2,3-Trichlorobenzene	20.0	18.7		ug/L		94	66 - 120
1,2,4-Trichlorobenzene	20.0	18.6		ug/L		93	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	20.3		ug/L		101	47 - 131
1,2-Dibromoethane	20.0	19.4		ug/L		97	77 - 120
1,2-Dichlorobenzene	20.0	19.4		ug/L		97	80 - 120
1,2-Dichloroethane	20.0	19.9		ug/L		100	73 - 124
1,2-Dichloropropane	20.0	19.7		ug/L		98	80 - 120
1,3-Dichlorobenzene	20.0	19.3		ug/L		96	80 - 120
1,4-Dichlorobenzene	20.0	19.5		ug/L		98	80 - 120
2-Butanone	150	156		ug/L		104	59 - 135
2-Hexanone	100	97.4		ug/L		97	56 - 135
4-Methyl-2-pentanone	100	94.4		ug/L		94	62 - 133
Acetone	150	140		ug/L		93	54 - 157
Benzene	20.0	19.2		ug/L		96	80 - 120
Bromochloromethane	20.0	20.4		ug/L		102	80 - 120
Bromodichloromethane	20.0	19.6		ug/L		98	71 - 120
Bromoform	20.0	20.2		ug/L		101	51 - 120
Bromomethane	20.0	20.4		ug/L		102	53 - 128
Carbon disulfide	20.0	19.2		ug/L		96	65 - 128
Carbon tetrachloride	20.0	20.3		ug/L		101	64 - 134
Chlorobenzene	20.0	19.5		ug/L		97	80 - 120
Chloroethane	20.0	19.6		ug/L		98	55 - 123
Chloroform	20.0	19.7		ug/L		98	80 - 120
Chloromethane	20.0	25.2	*+	ug/L		126	56 - 121
cis-1,2-Dichloroethene	20.0	19.6		ug/L		98	80 - 125
cis-1,3-Dichloropropene	20.0	19.8		ug/L		99	75 - 120
Cyclohexane	20.0	19.8		ug/L		99	68 - 126

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-124185/4
Matrix: Water
Analysis Batch: 124185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	20.0	19.6		ug/L		98	71 - 120
Dichlorodifluoromethane	20.0	24.2		ug/L		121	41 - 127
Ethylbenzene	20.0	19.2		ug/L		96	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.4		ug/L		107	73 - 139
Isopropylbenzene	20.0	19.1		ug/L		95	80 - 120
m&p-Xylene	40.0	38.2		ug/L		96	80 - 120
Methyl acetate	20.0	25.6		ug/L		128	54 - 136
Methyl tertiary butyl ether	20.0	19.8		ug/L		99	69 - 122
Methylcyclohexane	20.0	20.3		ug/L		101	67 - 121
Methylene Chloride	20.0	19.1		ug/L		96	80 - 120
Naphthalene	20.0	19.1		ug/L		96	53 - 124
o-Xylene	20.0	19.4		ug/L		97	80 - 120
Styrene	20.0	18.9		ug/L		94	80 - 120
Tetrachloroethene	20.0	16.7		ug/L		84	80 - 120
Toluene	20.0	19.3		ug/L		96	80 - 120
trans-1,2-Dichloroethene	20.0	19.5		ug/L		98	80 - 126
trans-1,3-Dichloropropene	20.0	19.8		ug/L		99	67 - 120
Trichloroethene	20.0	19.6		ug/L		98	80 - 120
Trichlorofluoromethane	20.0	21.3		ug/L		107	55 - 135
Vinyl chloride	20.0	21.5		ug/L		107	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-124390/16
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			05/10/21 17:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/10/21 17:10*	*1*

Lab Sample ID: LCS 410-124390/1013
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	4.81	4.41		ug/L		92	74 - 133

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-124390/1013
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-124390/14
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			4.81	4.72		ug/L		98	74 - 133	7	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	*100*		*80 - 120*

QC Association Summary

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

GC/MS VOA

Analysis Batch: 124185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-38011-1	Column Effluent-042621	Total/NA	Water	8260C	
410-38011-2	Column Influent-042621	Total/NA	Water	8260C	
410-38011-7	Trip Blank	Total/NA	Water	8260C	
MB 410-124185/6	Method Blank	Total/NA	Water	8260C	
LCS 410-124185/4	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 124390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-38011-1	Column Effluent-042621	Total/NA	Water	8260C SIM 14D	
410-38011-2	Column Influent-042621	Total/NA	Water	8260C SIM 14D	
410-38011-7	Trip Blank	Total/NA	Water	8260C SIM 14D	
MB 410-124390/16	Method Blank	Total/NA	Water	8260C SIM 14D	
LCS 410-124390/1013	Lab Control Sample	Total/NA	Water	8260C SIM 14D	
LCSD 410-124390/14	Lab Control Sample Dup	Total/NA	Water	8260C SIM 14D	

Lab Chronicle

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Effluent-042621
Lab Sample ID: 410-38011-1
Date Collected: 04/26/21 09:10
Matrix: Water
Date Received: 04/30/21 17:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	124185	05/10/21 02:17	USEJ	ELLE
Total/NA	Analysis	8260C SIM 14D		10	124390	05/10/21 18:11	USEJ	ELLE

Client Sample ID: Column Influent-042621
Lab Sample ID: 410-38011-2
Date Collected: 04/26/21 09:20
Matrix: Water
Date Received: 04/30/21 17:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	124185	05/10/21 02:37	USEJ	ELLE
Total/NA	Analysis	8260C SIM 14D		10	124390	05/10/21 18:31	USEJ	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-38011-7
Date Collected: 04/26/21 00:00
Matrix: Water
Date Received: 04/30/21 17:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	124185	05/09/21 23:56	USEJ	ELLE
Total/NA	Analysis	8260C SIM 14D		1	124390	05/10/21 17:30	USEJ	ELLE

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	1,1,1-Trichloroethane
8260C		Water	1,1,2,2-Tetrachloroethane
8260C		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260C		Water	1,1,2-Trichloroethane
8260C		Water	1,1-Dichloroethane
8260C		Water	1,1-Dichloroethene
8260C		Water	1,2,3-Trichlorobenzene
8260C		Water	1,2,4-Trichlorobenzene
8260C		Water	1,2-Dibromo-3-Chloropropane
8260C		Water	1,2-Dibromoethane
8260C		Water	1,2-Dichlorobenzene
8260C		Water	1,2-Dichloroethane
8260C		Water	1,2-Dichloropropane
8260C		Water	1,3-Dichlorobenzene
8260C		Water	1,4-Dichlorobenzene
8260C		Water	2-Butanone
8260C		Water	2-Hexanone
8260C		Water	4-Methyl-2-pentanone
8260C		Water	Acetone
8260C		Water	Benzene
8260C		Water	Bromochloromethane
8260C		Water	Bromodichloromethane
8260C		Water	Bromoform
8260C		Water	Bromomethane
8260C		Water	Carbon disulfide
8260C		Water	Carbon tetrachloride
8260C		Water	Chlorobenzene
8260C		Water	Chloroethane
8260C		Water	Chloroform
8260C		Water	Chloromethane
8260C		Water	cis-1,2-Dichloroethene
8260C		Water	cis-1,3-Dichloropropene
8260C		Water	Cyclohexane
8260C		Water	Dibromochloromethane
8260C		Water	Dichlorodifluoromethane
8260C		Water	Ethylbenzene
8260C		Water	Isopropylbenzene
8260C		Water	m&p-Xylene
8260C		Water	Methyl acetate
8260C		Water	Methyl tertiary butyl ether
8260C		Water	Methylcyclohexane
8260C		Water	Methylene Chloride
8260C		Water	Naphthalene
8260C		Water	o-Xylene
8260C		Water	Styrene

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22
8260C	Water	Tetrachloroethene	
8260C	Water	Toluene	
8260C	Water	trans-1,2-Dichloroethene	
8260C	Water	trans-1,3-Dichloropropene	
8260C	Water	Trichloroethene	
8260C	Water	Trichlorofluoromethane	
8260C	Water	Vinyl chloride	
8260C SIM 14D	Water	1,4-Dioxane	

Method Summary

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C SIM 14D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
5310C	SM 5310C TOC	SM18	ALS MTown
5550B	SM 5550BTannins and Lignins	SM18	ALS MTown
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: WSP USA Corp.
Job ID: 410-38011-1
Project/Site: Former Kop-Flex Facility Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-38011-1	Column Effluent-042621	Water	04/26/21 09:10	04/30/21 17:02	
410-38011-2	Column Influent-042621	Water	04/26/21 09:20	04/30/21 17:02	
410-38011-3	Column Effluent-042821	Water	04/28/21 11:00	04/30/21 17:02	
410-38011-4	Column Influent-042821	Water	04/28/21 11:05	04/30/21 17:02	
410-38011-5	Column Effluent-043021	Water	04/30/21 11:00	04/30/21 17:02	
410-38011-6	Column Influent-043021	Water	04/30/21 11:05	04/30/21 17:02	
410-38011-7	Trip Blank	Water	04/26/21 00:00	04/30/21 17:02	

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

May 24, 2021

ENV Subcontracting
Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Certificate of Analysis

Project Name:	**2020-WET CHEM PRICING**	Workorder:	**3173098**
Purchase Order:		Workorder ID:	**410-38011-1**

Dear ENV Subcontracting:

Enclosed are the analytical results for samples received by the laboratory on Monday, May 3, 2021.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

SAMPLE SUMMARY

Workorder: 3173098 410-38011-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3173098001	Column Effluent (410-38011-1)	Water	4/26/2021 09:10	5/3/2021 10:23	Collected by Client
3173098002	Column Effluent (410-38011-2)	Water	4/26/2021 09:20	5/3/2021 10:23	Collected by Client
3173098003	Column Effluent (410-38011-3)	Water	4/28/2021 11:00	5/3/2021 10:23	Collected by Client
3173098004	Column Effluent (410-38011-4)	Water	4/28/2021 11:05	5/3/2021 10:23	Collected by Client
3173098005	Column Effluent (410-38011-5)	Water	4/30/2021 11:00	5/3/2021 10:23	Collected by Client
3173098006	Column Effluent (410-38011-6)	Water	4/30/2021 11:05	5/3/2021 10:23	Collected by Client

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

SAMPLE SUMMARY

Workorder: 3173098 410-38011-1

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3173098 410-38011-1

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

Lab ID: **3173098001** Date Collected: 4/26/2021 09:10 Matrix: Water
Sample ID: **Column Effluent (410-38011-1)** Date Received: 5/3/2021 10:23

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10		5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.96	C	mg/L	0.50	0.18	SM5310B-2011		5/7/21 06:58	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

Lab ID: **3173098002** Date Collected: 4/26/2021 09:20 Matrix: Water
Sample ID: **Column Effluent (410-38011-2)** Date Received: 5/3/2021 10:23

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10		5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.94	C	mg/L	0.50	0.18	SM5310B-2011		5/7/21 06:58	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

Lab ID: **3173098003** Date Collected: 4/28/2021 11:00 Matrix: Water
Sample ID: **Column Effluent (410-38011-3)** Date Received: 5/3/2021 10:23

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C,1	mg/L	0.1	0.02	S5550B-10		5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	1.3	C	mg/L	0.50	0.18	SM5310B-2011		5/7/21 06:58	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

Lab ID: **3173098004** Date Collected: 4/28/2021 11:05 Matrix: Water
Sample ID: **Column Effluent (410-38011-4)** Date Received: 5/3/2021 10:23

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C	mg/L	0.1	0.02	S5550B-10		5/24/21 10:15	MBS	A
Total Organic Carbon (TOC)	0.74	C	mg/L	0.50	0.18	SM5310B-2011		5/7/21 06:58	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

Lab ID: **3173098005** Date Collected: 4/30/2021 11:00 Matrix: Water
Sample ID: **Column Effluent (410-38011-5)** Date Received: 5/3/2021 10:23

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C	mg/L	0.1	0.02	S5550B-10		5/24/21 12:20	MBS	A
Total Organic Carbon (TOC)	0.77	C	mg/L	0.50	0.18	SM5310B-2011		5/7/21 06:58	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

Lab ID: **3173098006** Date Collected: 4/30/2021 11:05 Matrix: Water
Sample ID: **Column Effluent (410-38011-6)** Date Received: 5/3/2021 10:23

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Tannin and Lignin	ND	C	mg/L	0.1	0.02	S5550B-10		5/24/21 12:20	MBS	A
Total Organic Carbon (TOC)	0.76	C	mg/L	0.50	0.18	SM5310B-2011		5/7/21 06:58	PAG	B

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3173098 410-38011-1

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3173098001	1	Column Effluent (410-38011-1)	S5550B-10	Tannin and Lignin
3173098002	1	Column Effluent (410-38011-2)	S5550B-10	Tannin and Lignin
3173098003	1	Column Effluent (410-38011-3)	S5550B-10	Tannin and Lignin

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3173098 410-38011-1

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3173098001	Column Effluent (410-38011-1)	S5550B-10		
3173098001	Column Effluent (410-38011-1)	SM5310B-2011		
3173098002	Column Effluent (410-38011-2)	S5550B-10		
3173098002	Column Effluent (410-38011-2)	SM5310B-2011		
3173098003	Column Effluent (410-38011-3)	S5550B-10		
3173098003	Column Effluent (410-38011-3)	SM5310B-2011		
3173098004	Column Effluent (410-38011-4)	S5550B-10		
3173098004	Column Effluent (410-38011-4)	SM5310B-2011		
3173098005	Column Effluent (410-38011-5)	S5550B-10		
3173098005	Column Effluent (410-38011-5)	SM5310B-2011		
3173098006	Column Effluent (410-38011-6)	S5550B-10		
3173098006	Column Effluent (410-38011-6)	SM5310B-2011		

Chain of Custody Record

3173098

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cottman, Hannah L		Carrier Tracking No: 661431.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Hannah.Cottman@eurofinset.com	Maryland	Page: Page 1 of 1
Company: ALS Environmental		Accreditations Required (See note): State - Maryland		Job #: 410-38011-1
Address: 301 Fulling Mill Road, ,	Due Date Requested: 5/21/2021			
City: Middletown	TAT Requested (days):			
State, Zip: PA, 17057				
Phone:	PO #:			
Email:	WO #:			
Project Name: Former Kop-Flex Facility Site	Project #: 41001602			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owastewat, BTeTissue, AnAir)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Low Level TOC) EPA 9310C	SUB (Tannins and Lignins) 6550B	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Column Effluent-042621 (410-38011-1)	4/26/21	09:10 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-042621 (410-38011-2)	4/26/21	09:20 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Effluent-042821 (410-38011-3)	4/28/21	11:00 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-042821 (410-38011-4)	4/28/21	11:05 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Effluent-043021 (410-38011-5)	4/30/21	11:00 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format
Column Influent-043021 (410-38011-6)	4/30/21	11:05 Eastern		Water			X	X	4	Standard Report Format; EDD Required - .xls format

3 VIALS, 1 AG 250

LW 5324

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Env places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Lancaster Laboratories Env laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Env attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Lancaster Laboratories Env.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 4/30/21 22:47	Company	Received by:	Date/Time: 5/3/21 0912	Company
Relinquished by:	Date/Time: 5/3/21 1023	Company	Received by: LW ALS	Date/Time: 5324 1023	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

2.5°C

301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

Condition of Sample Receipt Form

3173098

Client: Eurofins Lancaster Laboratories Environmental, LLC

Work Order #: [illegible]

Date: 1W534

1. Were airbills / tracking numbers present and recorded?	NONE	YES	NO
Tracking number:			
2. Are Custody Seals on shipping containers intact?	NONE	YES	NO
3. Are Custody Seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present?		YES	NO
5. Are the COC and bottle labels complete, legible and in agreement?		YES	NO
5a. Does the COC contain sample locations?		YES	NO
5b. Does the COC contain date and time of sample collection for all samples?		YES	NO
5c. Does the COC contain sample collectors name?	N/A	YES	NO
5d. Does the COC note the type(s) of preservation for all bottles?		YES	NO
5e. Does the COC note the number of bottles submitted for each sample?		YES	NO
5f. Does the COC note the type of sample, composite or grab?	N/A	YES	NO
5g. Does the COC note the matrix of the sample(s)?		YES	NO
6. Are all aqueous samples requiring preservation preserved correctly?[1]	N/A	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		YES	NO
8. Are all samples within holding times for the requested analyses?		YES	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		YES	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	N/A	YES	NO
11. Were the samples received on ice?		YES	NO
12. Were sample temperatures measured at 0.0-6.0°C		YES	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	NO
13a. Are the samples required for SDWA compliance reporting?	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	N/A	YES	NO

Cooler #:								
Temperature (°C):	2							
Thermometer ID:	574							
Radiological (µCi):								

COMMENTS (Required for all NO responses above and any sample non-conformance):

[1]Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

Chain of Custody Record

eurofins Environment Testing America

Client: 410-38011 Chain of Custody	Sampler: Dave Seaman	Lab PM: Cottman, Hannah L	Carrier Tracking No(s):	COC No: 410-18548-3588.1
Client Contact: Eric Johnson	Phone: 410-299-3125	E-Mail: Hannah.Cottman@eurofinset.com	State of Origin: Maryland	Page: Page 1 of 1
Company: WSP USA Corp	PWSID: NA			Job #:
Address:	Due Date Requested:			
City: Herndon	TAT Requested (days): Standard			
State, Zip: VA, 20171	Compliance Project: Δ Yes Δ No			
Phone: 703-318-3936(Tel)	PO #: 31401545.010			
Email: eric.johnson@wsp.com	WO #:			
Project Name: Former Kop-Flex Facility Site	Project #: 41001602			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	624.1_PREC, 8260C, 8260C_SIM_14DX	6310C - Low Level TOC	5550B - Tannins and Lignin	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A				
Column Effluent-042621	4-26-21	0910	G	W			X	X	X		
Column Influent-042621	4-26-21	0920	G	W			X	X	X		
Column Effluent-042821	4-28-21	1100	G	W				X	X		
Column Influent-042821	4-28-21	1105	G	W				X	X		
Column Effluent-043021	4/30/21	1100	G	W				X	X		
Column Influent-043021	4/30/21	1105	G	W				X	X		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by	Date	Time	Method of Shipment

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	S+S Tech	4/30/21 1145	S+S Tech	Harry Wiggins	4/30/21 11:45	KLI
2	Harry Wiggins	4/30/21 16:62				
3					4/30/21 17:02	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.1

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: WSP USA Corp.

Job Number: 410-38011-1

Login Number: 38011

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Phillips, Ann-Marie E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-39015-1
Client Project/Site: Former Kop-Flex Facility Site
Revision: 1

For:
WSP USA Corp.
Attn: Environmental Accounts Payable
13530 Dulles Technology Drive
Suite 300
Herndon, Virginia 20171

Attn: Eric Johnson

Authorized for release by:
5/24/2021 6:05:17 PM

Hannah Cottman, Operations Support Specialist
(717)556-7383
Hannah.Cottman@eurofinset.com

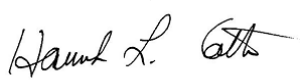
Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Hannah Cottman
Operations Support Specialist
5/24/2021 6:05:17 PM

Table of Contents

Definitions/Glossary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-39015-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-39015-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/12/2021. The report (revision 1) is being revised due to: Subcontract data was not included in the original report.

Receipt
The samples were received on 5/8/2021 5:19 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.9º C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

SUBCONTRACTING

The following analyses were subcontracted to ALS Environmental:
Low Level TOC
Tannins and Lignins

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Column Effluent-050321 — Lab Sample ID: 410-39015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	88		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	17		1.0	0.30	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	39		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	200		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	1.3		1.0	0.30	ug/L	1		8260C	Total/NA
Chloroethane	4.0		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.4		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	0.50	J	1.0	0.20	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.28	J	1.0	0.20	ug/L	1		8260C	Total/NA
Trichloroethene	1.0		1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	0.46	J	1.0	0.20	ug/L	1		8260C	Total/NA

Client Sample ID: Column Influent-050321 — Lab Sample ID: 410-39015-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	77		4.0	1.7	ug/L	10		8260C SIM 14D	Total/NA
1,1,1-Trichloroethane	16		1.0	0.30	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	39		1.0	0.20	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	200		1.0	0.20	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	1.3		1.0	0.30	ug/L	1		8260C	Total/NA
Chloroethane	4.1		1.0	0.20	ug/L	1		8260C	Total/NA
Methyl tertiary butyl ether	0.48	J	1.0	0.20	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.23	J	1.0	0.20	ug/L	1		8260C	Total/NA
Trichloroethene	0.94	J	1.0	0.20	ug/L	1		8260C	Total/NA
Vinyl chloride	0.45	J	1.0	0.20	ug/L	1		8260C	Total/NA

Client Sample ID: Column Effluent-050521 — Lab Sample ID: 410-39015-3

No Detections.

Client Sample ID: Column Influent-050521 — Lab Sample ID: 410-39015-4

No Detections.

Client Sample ID: Column Effluent-050721 — Lab Sample ID: 410-39015-5

No Detections.

Client Sample ID: Column Influent-050721 — Lab Sample ID: 410-39015-6

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 410-39015-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Column Effluent-050321

Lab Sample ID: 410-39015-1

Date Collected: 05/03/21 06:55

Matrix: Water

Date Received: 05/08/21 17:19

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**88**		4.0	1.7	ug/L			05/10/21 18:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/21 18:51*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**17**		1.0	0.30	ug/L			05/12/21 06:30	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
1,1-Dichloroethane	**39**		1.0	0.20	ug/L			05/12/21 06:30	1
1,1-Dichloroethene	**200**		1.0	0.20	ug/L			05/12/21 06:30	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/12/21 06:30	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/12/21 06:30	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/12/21 06:30	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
1,2-Dichloroethane	**1.3**		1.0	0.30	ug/L			05/12/21 06:30	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
2-Butanone	<0.30		10	0.30	ug/L			05/12/21 06:30	1
2-Hexanone	<0.30		10	0.30	ug/L			05/12/21 06:30	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/12/21 06:30	1
Acetone	<0.70		20	0.70	ug/L			05/12/21 06:30	1
Benzene	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Bromoform	<1.0		4.0	1.0	ug/L			05/12/21 06:30	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/12/21 06:30	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Chloroethane	**4.0**		1.0	0.20	ug/L			05/12/21 06:30	1
Chloroform	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Chloromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
cis-1,2-Dichloroethene	**1.4**		1.0	0.20	ug/L			05/12/21 06:30	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/12/21 06:30	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/12/21 06:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/12/21 06:30	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/12/21 06:30	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/12/21 06:30	1
Methyl tertiary butyl ether	**0.50**	**J**	1.0	0.20	ug/L			05/12/21 06:30	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/12/21 06:30	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/12/21 06:30	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/12/21 06:30	1

Client: WSP USA Corp.
Job ID: 410-39015-1
Project/Site: Former Kop-Flex Facility Site

Client Sample ID: Column Effluent-050321
Lab Sample ID: 410-39015-1
Date Collected: 05/03/21 06:55
Matrix: Water
Date Received: 05/08/21 17:19

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			05/12/21 06:30	1
Styrene	<0.20		5.0	0.20	ug/L			05/12/21 06:30	1
Tetrachloroethene	**0.28**	**J**	1.0	0.20	ug/L			05/12/21 06:30	1
Toluene	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Trichloroethene	**1.0**		1.0	0.20	ug/L			05/12/21 06:30	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:30	1
Vinyl chloride	**0.46**	**J**	1.0	0.20	ug/L			05/12/21 06:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*05/12/21 06:30*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/12/21 06:30*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*05/12/21 06:30*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/12/21 06:30*	*1*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Column Influent-050321

Date Collected: 05/03/21 07:05
Date Received: 05/08/21 17:19

Lab Sample ID: 410-39015-2

Matrix: Water

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**77**		4.0	1.7	ug/L			05/10/21 19:11	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/21 19:11*	*10*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**16**		1.0	0.30	ug/L			05/12/21 06:52	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
1,1-Dichloroethane	**39**		1.0	0.20	ug/L			05/12/21 06:52	1
1,1-Dichloroethene	**200**		1.0	0.20	ug/L			05/12/21 06:52	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/12/21 06:52	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/12/21 06:52	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/12/21 06:52	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
1,2-Dichloroethane	**1.3**		1.0	0.30	ug/L			05/12/21 06:52	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
2-Butanone	<0.30		10	0.30	ug/L			05/12/21 06:52	1
2-Hexanone	<0.30		10	0.30	ug/L			05/12/21 06:52	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/12/21 06:52	1
Acetone	<0.70		20	0.70	ug/L			05/12/21 06:52	1
Benzene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Bromoform	<1.0		4.0	1.0	ug/L			05/12/21 06:52	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/12/21 06:52	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Chloroethane	**4.1**		1.0	0.20	ug/L			05/12/21 06:52	1
Chloroform	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Chloromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/12/21 06:52	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/12/21 06:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/12/21 06:52	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/12/21 06:52	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/12/21 06:52	1
Methyl tertiary butyl ether	**0.48**	**J**	1.0	0.20	ug/L			05/12/21 06:52	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/12/21 06:52	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/12/21 06:52	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/12/21 06:52	1

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Column Influent-050321

Lab Sample ID: 410-39015-2

Date Collected: 05/03/21 07:05

Matrix: Water

Date Received: 05/08/21 17:19

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			05/12/21 06:52	1
Styrene	<0.20		5.0	0.20	ug/L			05/12/21 06:52	1
Tetrachloroethene	**0.23**	**J**	1.0	0.20	ug/L			05/12/21 06:52	1
Toluene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Trichloroethene	**0.94**	**J**	1.0	0.20	ug/L			05/12/21 06:52	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/12/21 06:52	1
Vinyl chloride	**0.45**	**J**	1.0	0.20	ug/L			05/12/21 06:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*05/12/21 06:52*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/12/21 06:52*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*05/12/21 06:52*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/12/21 06:52*	*1*

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Trip Blank

Date Collected: 05/03/21 00:00
Date Received: 05/08/21 17:19

Lab Sample ID: 410-39015-7

Matrix: Water

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			05/10/21 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/10/21 17:50*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			05/11/21 23:31	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/11/21 23:31	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/11/21 23:31	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/11/21 23:31	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			05/11/21 23:31	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
2-Butanone	<0.30		10	0.30	ug/L			05/11/21 23:31	1
2-Hexanone	<0.30		10	0.30	ug/L			05/11/21 23:31	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/11/21 23:31	1
Acetone	<0.70		20	0.70	ug/L			05/11/21 23:31	1
Benzene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Bromoform	<1.0		4.0	1.0	ug/L			05/11/21 23:31	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/11/21 23:31	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Chloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Chloroform	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Chloromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/11/21 23:31	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/11/21 23:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/11/21 23:31	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/11/21 23:31	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/11/21 23:31	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/11/21 23:31	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/11/21 23:31	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/11/21 23:31	1

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Trip Blank

Date Collected: 05/03/21 00:00
Date Received: 05/08/21 17:19

Lab Sample ID: 410-39015-7

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.40		1.0	0.40	ug/L			05/11/21 23:31	1
Styrene	<0.20		5.0	0.20	ug/L			05/11/21 23:31	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Toluene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Trichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/11/21 23:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*05/11/21 23:31*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/11/21 23:31*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*05/11/21 23:31*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/11/21 23:31*	*1*

Action Limit Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Column Effluent-050321 — Lab Sample ID: 410-39015-1

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	17		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	39		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	**200**		ug/L	**7**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	1.3		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**4.0**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	1.4		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	0.50	J	ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	0.28	J	ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	1.0		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	0.46	J	ug/L	2	1.0	8260C	Total/NA

Client Sample ID: Column Influent-050321 — Lab Sample ID: 410-39015-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	16		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA

Client Sample ID: Column Influent-050321 (Continued) — Lab Sample ID: 410-39015-2

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1-Dichloroethane	39		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	**200**		ug/L	**7**	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	1.3		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	**4.1**		ug/L	**3.6**	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	<0.20		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	0.48	J	ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	0.23	J	ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	0.94	J	ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	0.45	J	ug/L	2	1.0	8260C	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 410-39015-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	<0.30		ug/L	200	1.0	8260C	Total/NA
1,1,2,2-Tetrachloroethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,1,2-Trichloroethane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,1-Dichloroethane	<0.20		ug/L	90	1.0	8260C	Total/NA
1,1-Dichloroethene	<0.20		ug/L	7	1.0	8260C	Total/NA
1,2-Dibromo-3-Chloropropane	<0.30		ug/L	0.2	5.0	8260C	Total/NA

Action Limit Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Trip Blank (Continued)

Lab Sample ID: 410-39015-7

POTENTIAL STLC / TCLP / TTLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
1,2-Dibromoethane	<0.20		ug/L	0.05	1.0	8260C	Total/NA
1,2-Dichlorobenzene	<0.20		ug/L	600	5.0	8260C	Total/NA
1,2-Dichloroethane	<0.30		ug/L	5	1.0	8260C	Total/NA
1,2-Dichloropropane	<0.20		ug/L	5	1.0	8260C	Total/NA
1,3-Dichlorobenzene	<0.20		ug/L	2	5.0	8260C	Total/NA
1,4-Dichlorobenzene	<0.20		ug/L	75	5.0	8260C	Total/NA
2-Butanone	<0.30		ug/L	700	10	8260C	Total/NA
4-Methyl-2-pentanone	<0.50		ug/L	630	10	8260C	Total/NA
Acetone	<0.70		ug/L	550	20	8260C	Total/NA
Benzene	<0.20		ug/L	5	1.0	8260C	Total/NA
Bromodichloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Bromoform	<1.0		ug/L	80	4.0	8260C	Total/NA
Bromomethane	<0.30		ug/L	0.85	1.0	8260C	Total/NA
Carbon disulfide	<0.20		ug/L	100	5.0	8260C	Total/NA
Carbon tetrachloride	<0.20		ug/L	5	1.0	8260C	Total/NA
Chlorobenzene	<0.20		ug/L	100	1.0	8260C	Total/NA
Chloroethane	<0.20		ug/L	3.6	1.0	8260C	Total/NA
Chloroform	<0.20		ug/L	80	1.0	8260C	Total/NA
Chloromethane	<0.20		ug/L	190	1.0	8260C	Total/NA
cis-1,2-Dichloroethene	<0.20		ug/L	70	1.0	8260C	Total/NA
cis-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Dibromochloromethane	<0.20		ug/L	80	1.0	8260C	Total/NA
Ethylbenzene	<0.40		ug/L	700	1.0	8260C	Total/NA
Isopropylbenzene	<0.20		ug/L	66	5.0	8260C	Total/NA
Methyl tertiary butyl ether	<0.20		ug/L	20	1.0	8260C	Total/NA
Naphthalene	<1.0		ug/L	0.65	5.0	8260C	Total/NA
o-Xylene	<0.40		ug/L	10000	1.0	8260C	Total/NA
Styrene	<0.20		ug/L	100	5.0	8260C	Total/NA
Tetrachloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Toluene	<0.20		ug/L	1000	1.0	8260C	Total/NA
trans-1,2-Dichloroethene	<0.20		ug/L	100	1.0	8260C	Total/NA
trans-1,3-Dichloropropene	<0.20		ug/L	0.44	1.0	8260C	Total/NA
Trichloroethene	<0.20		ug/L	5	1.0	8260C	Total/NA
Vinyl chloride	<0.20		ug/L	2	1.0	8260C	Total/NA

Surrogate Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-39015-1	Column Effluent-050321	101	98	100	99
410-39015-2	Column Influent-050321	100	98	99	100
410-39015-7	Trip Blank	100	99	99	100
LCS 410-125147/4	Lab Control Sample	100	99	100	100
MB 410-125147/6	Method Blank	100	99	98	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TOL
Lab Sample ID	Client Sample ID	(80-120)
410-39015-1	Column Effluent-050321	101
410-39015-2	Column Influent-050321	101
410-39015-7	Trip Blank	100
LCS 410-124390/1013	Lab Control Sample	100
LCSD 410-124390/14	Lab Control Sample Dup	100
MB 410-124390/16	Method Blank	100

Surrogate Legend

TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-125147/6
Matrix: Water
Analysis Batch: 125147

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.30		1.0	0.30	ug/L			05/11/21 23:09	1
1,1,2,2-Tetrachloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
1,1,2-Trichloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
1,1-Dichloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
1,1-Dichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
1,2,3-Trichlorobenzene	<0.40		5.0	0.40	ug/L			05/11/21 23:09	1
1,2,4-Trichlorobenzene	<0.30		5.0	0.30	ug/L			05/11/21 23:09	1
1,2-Dibromo-3-Chloropropane	<0.30		5.0	0.30	ug/L			05/11/21 23:09	1
1,2-Dibromoethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
1,2-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
1,2-Dichloroethane	<0.30		1.0	0.30	ug/L			05/11/21 23:09	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
1,3-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
1,4-Dichlorobenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
2-Butanone	<0.30		10	0.30	ug/L			05/11/21 23:09	1
2-Hexanone	<0.30		10	0.30	ug/L			05/11/21 23:09	1
4-Methyl-2-pentanone	<0.50		10	0.50	ug/L			05/11/21 23:09	1
Acetone	<0.70		20	0.70	ug/L			05/11/21 23:09	1
Benzene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Bromochloromethane	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
Bromodichloromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Bromoform	<1.0		4.0	1.0	ug/L			05/11/21 23:09	1
Bromomethane	<0.30		1.0	0.30	ug/L			05/11/21 23:09	1
Carbon disulfide	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
Carbon tetrachloride	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Chlorobenzene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Chloroethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Chloroform	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Chloromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
cis-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
cis-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Cyclohexane	<1.0		5.0	1.0	ug/L			05/11/21 23:09	1
Dibromochloromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Ethylbenzene	<0.40		1.0	0.40	ug/L			05/11/21 23:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.20		10	0.20	ug/L			05/11/21 23:09	1
Isopropylbenzene	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
m&p-Xylene	<1.0		5.0	1.0	ug/L			05/11/21 23:09	1
Methyl acetate	<0.30		5.0	0.30	ug/L			05/11/21 23:09	1
Methyl tertiary butyl ether	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Methylcyclohexane	<0.50		5.0	0.50	ug/L			05/11/21 23:09	1
Methylene Chloride	<0.30		1.0	0.30	ug/L			05/11/21 23:09	1
Naphthalene	<1.0		5.0	1.0	ug/L			05/11/21 23:09	1
o-Xylene	<0.40		1.0	0.40	ug/L			05/11/21 23:09	1
Styrene	<0.20		5.0	0.20	ug/L			05/11/21 23:09	1
Tetrachloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Toluene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
trans-1,2-Dichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-125147/6
Matrix: Water
Analysis Batch: 125147

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Trichloroethene	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Trichlorofluoromethane	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/11/21 23:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*05/11/21 23:09*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/11/21 23:09*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*05/11/21 23:09*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/11/21 23:09*	*1*

Lab Sample ID: LCS 410-125147/4
Matrix: Water
Analysis Batch: 125147

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	19.6		ug/L		98	67 - 126
1,1,2,2-Tetrachloroethane	20.0	19.2		ug/L		96	72 - 120
1,1,2-Trichloroethane	20.0	19.4		ug/L		97	80 - 120
1,1-Dichloroethane	20.0	19.3		ug/L		96	80 - 120
1,1-Dichloroethene	20.0	21.5		ug/L		108	80 - 131
1,2,3-Trichlorobenzene	20.0	18.8		ug/L		94	66 - 120
1,2,4-Trichlorobenzene	20.0	18.9		ug/L		95	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	17.7		ug/L		88	47 - 131
1,2-Dibromoethane	20.0	18.9		ug/L		94	77 - 120
1,2-Dichlorobenzene	20.0	19.4		ug/L		97	80 - 120
1,2-Dichloroethane	20.0	18.8		ug/L		94	73 - 124
1,2-Dichloropropane	20.0	19.6		ug/L		98	80 - 120
1,3-Dichlorobenzene	20.0	19.2		ug/L		96	80 - 120
1,4-Dichlorobenzene	20.0	19.4		ug/L		97	80 - 120
2-Butanone	250	240		ug/L		96	59 - 135
2-Hexanone	250	233		ug/L		93	56 - 135
4-Methyl-2-pentanone	250	231		ug/L		92	62 - 133
Acetone	250	250		ug/L		100	54 - 157
Benzene	20.0	19.2		ug/L		96	80 - 120
Bromochloromethane	20.0	19.0		ug/L		95	80 - 120
Bromodichloromethane	20.0	19.1		ug/L		96	71 - 120
Bromoform	20.0	18.2		ug/L		91	51 - 120
Bromomethane	20.0	18.0		ug/L		90	53 - 128
Carbon disulfide	20.0	21.1		ug/L		106	65 - 128
Carbon tetrachloride	20.0	19.6		ug/L		98	64 - 134
Chlorobenzene	20.0	19.4		ug/L		97	80 - 120
Chloroethane	20.0	17.7		ug/L		89	55 - 123
Chloroform	20.0	19.0		ug/L		95	80 - 120
Chloromethane	20.0	21.7		ug/L		108	56 - 121
cis-1,2-Dichloroethene	20.0	19.5		ug/L		98	80 - 125
cis-1,3-Dichloropropene	20.0	19.1		ug/L		96	75 - 120
Cyclohexane	20.0	20.5		ug/L		103	68 - 126

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-125147/4
Matrix: Water
Analysis Batch: 125147

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	20.0	18.9		ug/L		94	71 - 120
Dichlorodifluoromethane	20.0	25.4		ug/L		127	41 - 127
Ethylbenzene	20.0	19.6		ug/L		98	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	22.1		ug/L		111	73 - 139
Isopropylbenzene	20.0	19.3		ug/L		96	80 - 120
m&p-Xylene	40.0	39.1		ug/L		98	80 - 120
Methyl acetate	20.0	19.0		ug/L		95	54 - 136
Methyl tertiary butyl ether	20.0	19.4		ug/L		97	69 - 122
Methylcyclohexane	20.0	20.0		ug/L		100	67 - 121
Methylene Chloride	20.0	20.0		ug/L		100	80 - 120
Naphthalene	20.0	18.9		ug/L		94	53 - 124
o-Xylene	20.0	19.6		ug/L		98	80 - 120
Styrene	20.0	19.7		ug/L		98	80 - 120
Tetrachloroethene	20.0	18.7		ug/L		94	80 - 120
Toluene	20.0	19.0		ug/L		95	80 - 120
trans-1,2-Dichloroethene	20.0	19.7		ug/L		98	80 - 126
trans-1,3-Dichloropropene	20.0	19.5		ug/L		97	67 - 120
Trichloroethene	20.0	19.2		ug/L		96	80 - 120
Trichlorofluoromethane	20.0	19.8		ug/L		99	55 - 135
Vinyl chloride	20.0	22.0		ug/L		110	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-124390/16
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.17		0.40	0.17	ug/L			05/10/21 17:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/10/21 17:10*	*1*

Lab Sample ID: LCS 410-124390/1013
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	4.81	4.41		ug/L		92	74 - 133

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-124390/1013
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-124390/14
Matrix: Water
Analysis Batch: 124390

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			4.81	4.72		ug/L		98	74 - 133	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*

QC Association Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

GC/MS VOA

Analysis Batch: 124390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-39015-1	Column Effluent-050321	Total/NA	Water	8260C SIM 14D	
410-39015-2	Column Influent-050321	Total/NA	Water	8260C SIM 14D	
410-39015-7	Trip Blank	Total/NA	Water	8260C SIM 14D	
MB 410-124390/16	Method Blank	Total/NA	Water	8260C SIM 14D	
LCS 410-124390/1013	Lab Control Sample	Total/NA	Water	8260C SIM 14D	
LCSD 410-124390/14	Lab Control Sample Dup	Total/NA	Water	8260C SIM 14D	

Analysis Batch: 125147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-39015-1	Column Effluent-050321	Total/NA	Water	8260C	
410-39015-2	Column Influent-050321	Total/NA	Water	8260C	
410-39015-7	Trip Blank	Total/NA	Water	8260C	
MB 410-125147/6	Method Blank	Total/NA	Water	8260C	
LCS 410-125147/4	Lab Control Sample	Total/NA	Water	8260C	

Lab Chronicle

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Client Sample ID: Column Effluent-050321

Lab Sample ID: 410-39015-1
Matrix: Water
Date Collected: 05/03/21 06:55
Date Received: 05/08/21 17:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	125147	05/12/21 06:30	TQ4J	ELLE
Total/NA	Analysis	8260C SIM 14D		10	124390	05/10/21 18:51	USEJ	ELLE

Client Sample ID: Column Influent-050321

Lab Sample ID: 410-39015-2
Matrix: Water
Date Collected: 05/03/21 07:05
Date Received: 05/08/21 17:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	125147	05/12/21 06:52	TQ4J	ELLE
Total/NA	Analysis	8260C SIM 14D		10	124390	05/10/21 19:11	USEJ	ELLE

Client Sample ID: Trip Blank

Lab Sample ID: 410-39015-7
Matrix: Water
Date Collected: 05/03/21 00:00
Date Received: 05/08/21 17:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	125147	05/11/21 23:31	TQ4J	ELLE
Total/NA	Analysis	8260C SIM 14D		1	124390	05/10/21 17:50	USEJ	ELLE

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: WSP USA Corp. Job ID: 410-39015-1
Project/Site: Former Kop-Flex Facility Site

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	1,1,1-Trichloroethane
8260C		Water	1,1,2,2-Tetrachloroethane
8260C		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260C		Water	1,1,2-Trichloroethane
8260C		Water	1,1-Dichloroethane
8260C		Water	1,1-Dichloroethene
8260C		Water	1,2,3-Trichlorobenzene
8260C		Water	1,2,4-Trichlorobenzene
8260C		Water	1,2-Dibromo-3-Chloropropane
8260C		Water	1,2-Dibromoethane
8260C		Water	1,2-Dichlorobenzene
8260C		Water	1,2-Dichloroethane
8260C		Water	1,2-Dichloropropane
8260C		Water	1,3-Dichlorobenzene
8260C		Water	1,4-Dichlorobenzene
8260C		Water	2-Butanone
8260C		Water	2-Hexanone
8260C		Water	4-Methyl-2-pentanone
8260C		Water	Acetone
8260C		Water	Benzene
8260C		Water	Bromochloromethane
8260C		Water	Bromodichloromethane
8260C		Water	Bromoform
8260C		Water	Bromomethane
8260C		Water	Carbon disulfide
8260C		Water	Carbon tetrachloride
8260C		Water	Chlorobenzene
8260C		Water	Chloroethane
8260C		Water	Chloroform
8260C		Water	Chloromethane
8260C		Water	cis-1,2-Dichloroethene
8260C		Water	cis-1,3-Dichloropropene
8260C		Water	Cyclohexane
8260C		Water	Dibromochloromethane
8260C		Water	Dichlorodifluoromethane
8260C		Water	Ethylbenzene
8260C		Water	Isopropylbenzene
8260C		Water	m&p-Xylene
8260C		Water	Methyl acetate
8260C		Water	Methyl tertiary butyl ether
8260C		Water	Methylcyclohexane
8260C		Water	Methylene Chloride
8260C		Water	Naphthalene
8260C		Water	o-Xylene
8260C		Water	Styrene

Accreditation/Certification Summary

Client: WSP USA Corp. Job ID: 410-39015-1
Project/Site: Former Kop-Flex Facility Site

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22
8260C	Water	Tetrachloroethene	
8260C	Water	Toluene	
8260C	Water	trans-1,2-Dichloroethene	
8260C	Water	trans-1,3-Dichloropropene	
8260C	Water	Trichloroethene	
8260C	Water	Trichlorofluoromethane	
8260C	Water	Vinyl chloride	
8260C SIM 14D	Water	1,4-Dioxane	

Method Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-39015-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C SIM 14D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
5310C	SM 5310C TOC	SM18	ALS MTown
5550B	SM 5550BTannins and Lignins	SM18	ALS MTown
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ALS MTown = ALS Environmental - Middletown, PA, 301 Fulling Mill Road, Middletown, PA 17057

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: WSP USA Corp.
Job ID: 410-39015-1
Project/Site: Former Kop-Flex Facility Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-39015-1	Column Effluent-050321	Water	05/03/21 06:55	05/08/21 17:19	
410-39015-2	Column Influent-050321	Water	05/03/21 07:05	05/08/21 17:19	
410-39015-3	Column Effluent-050521	Water	05/05/21 12:05	05/08/21 17:19	
410-39015-4	Column Influent-050521	Water	05/05/21 12:10	05/08/21 17:19	
410-39015-5	Column Effluent-050721	Water	05/07/21 11:05	05/08/21 17:19	
410-39015-6	Column Influent-050721	Water	05/07/21 11:15	05/08/21 17:19	
410-39015-7	Trip Blank	Water	05/03/21 00:00	05/08/21 17:19	

410-39015 Chain of Custody

Chain of Custody Record

eurofins Environment Testing America

Sampler: Dave Seaman	Lab PM: Cottman, Hannah L	Carrier Tracking No(s):	COC No: 410-18548-3588.1
Phone: 410 299-3125	E-Mail: Hannah.Cottman@eurofinset.com	State of Origin: Maryland	Page: Page 1 of 1
Company: WSP USA Corp	PWSID: NA		Job #:

Address:	Due Date Requested:
City: Herndon	TAT Requested (days): Standard
State, Zip: VA, 20171	Compliance Project: Δ Yes Δ No
Phone: 703-318-3936(Tel)	PO #: 31401545.010
Email: eric.johnson@wsp.com	WO #:
Project Name: Former Kop-Flex Facility Site	Project #: 41001602
Site:	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	624.1_PREC, 8260C, 8260C_SIM_14DX	5310C - Low Level TOC	5550B - Tannins and Lignin													Total Number of containers	Special Instructions/Note:
Preservation Code:							A	A	N														
Column Effluent-050321	5-3-21	0655	G	W			X	X	X														
Column Influent-050321	5-3-21	0705	G	W			X	X	X														
Column Effluent-050521	5-5-21	1205	G	W				X	X														
Column Influent-050521	5-5-21	1210	G	W				X	X														
Column Effluent-050721	5-7-21	1105	G	W				X	X														
Column Influent-050721	5-7-21	1115	G	W				X	X														

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 5-7-21 1230	Company: S&S Tech	Received by:	Date/Time: 5/7/21 12:30	Company:		
Relinquished by:	Date/Time: 5/7/21 16:43	Company:	Received by:	Date/Time:	Company:		
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5-7-21 1714	Company: ECC		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.9

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: WSP USA Corp.

Job Number: 410-39015-1

Login Number: 39015
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

C-2 RESIN CLEANING EVALUATION

10/26/2021

WSP, Baltimore, MD T1100 Resin Report

Introduction

Recirculation Technologies, LLC (RTI) has analyzed the **T1100** before and after cleaning resin samples from WSP in Baltimore, MD. The resin is Dow Ambersorb 560, a carbonaceous adsorbent used to remove selective organics from water solutions.

Analysis

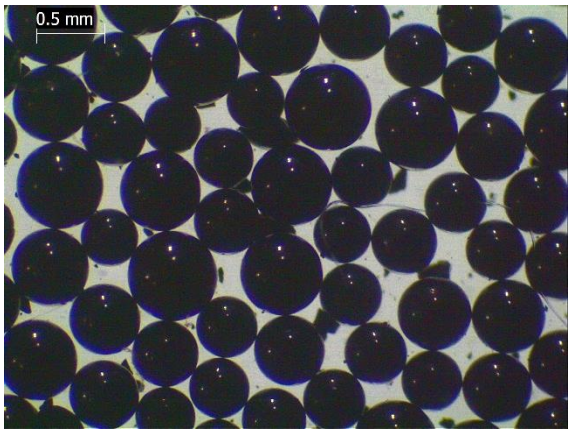
Total Organic Carbon (TOC) analysis, in ppm, shows organic material present in the before cleaning resin sample. The cleaning process performed was a series of subsequent rounds of fresh 10% NaOH solution in the presence of heat with frequent mixing. This method was successful in removing organic material from the resin.

Resin Sample	VCS Color Scale[1]	Total Organic Carbon, ppm
T1100 Before Cleaning	3	54
T1100 After Cleaning	3	41
New Resin	3	34

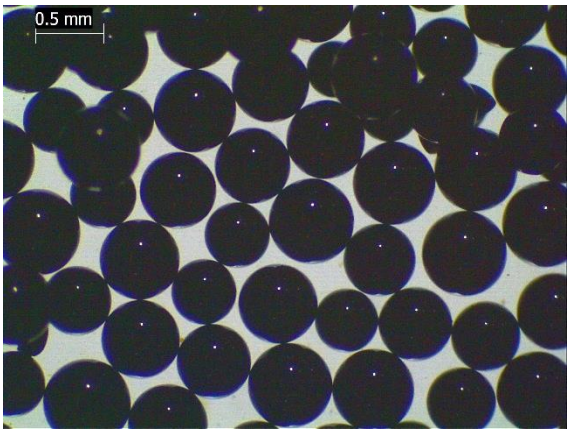
[1] VCS is Varnish Color Scale, a qualitative method used to evaluate varnish. It has been co-opted to characterize natural organics present in solutions since many natural organics are highly colored. The scale extends from 0, which is water-white, to 18, which is opaque black.

This represents a **24%** removal of organic material from before cleaning to after cleaning. This fraction of the organic material was removed efficiently during the cleaning. The TOC solutions eluted from the before and after resin samples showed a light solution before (3 on the 0-18 scale) and a light solution after (3 on the same 0-18 scale), corresponding to low levels of organics present before and less organics present after cleaning.

The before cleaning resin is surrounded by particulates and some resin fines. The particulates were removed during cleaning by RTI. This opens the flow of process solution through the entire resin bed, allowing for better treatment.



T1100 Before Cleaning Resin Sample



T1100 After Cleaning Resin Sample

Conclusion

The cleaning of the T1100 resin with a 10% NaOH solution removed a portion of the organic fouling contained in the resin. This method lowered the organic fouling, removed all particulate fouling, and will allow the resin to function optimally going forward.

WSP, Baltimore, MD T1200 Resin Report

Introduction

Recirculation Technologies, LLC (RTI) has analyzed the **T1200** before and after cleaning resin samples from WSP in Baltimore, MD. The resin is Dow Ambersorb 560, a carbonaceous adsorbent used to remove selective organics from water solutions.

Analysis

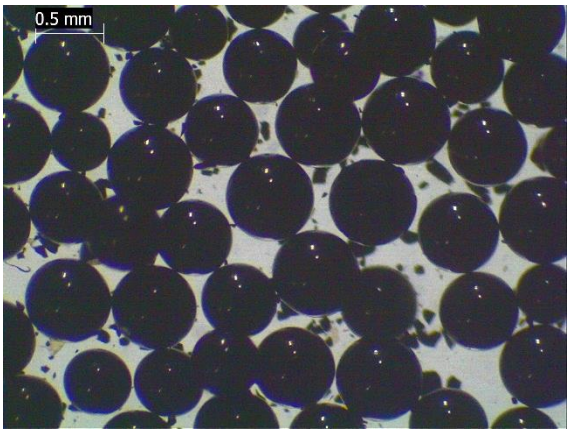
Total Organic Carbon (TOC) analysis, in ppm, shows organic material present in the before cleaning resin sample. The cleaning process performed was a series of subsequent rounds of fresh 10% NaOH solution in the presence of heat with frequent mixing. This method was successful in removing organic material from the resin.

Resin Sample	VCS Color Scale[1]	Total Organic Carbon, ppm
T1100 Before Cleaning	3	63
T1100 After Cleaning	3	45
New Resin	3	34

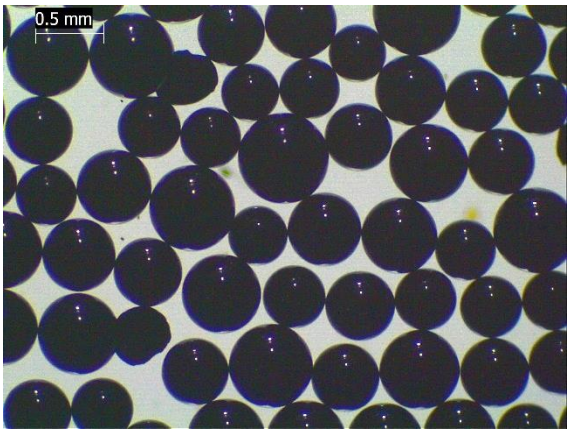
[1] VCS is Varnish Color Scale, a qualitative method used to evaluate varnish. It has been co-opted to characterize natural organics present in solutions since many natural organics are highly colored. The scale extends from 0, which is water-white, to 18, which is opaque black.

This represents a **29%** removal of organic material from before cleaning to after cleaning. This fraction of the organic material was removed efficiently during the cleaning. The TOC solutions eluted from the before and after resin samples showed a light solution before (3 on the 0-18 scale) and a light solution after (3 on the same 0-18 scale), corresponding to low levels of organics present before and less organics present after cleaning.

The before cleaning resin is surrounded by particulates and some resin fines. The particulates were removed during cleaning by RTI. This opens the flow of process solution through the entire resin bed, allowing for better treatment.



T1200 Before Cleaning Resin Sample



T1200 After Cleaning Resin Sample

Conclusion

The cleaning of the T1200 resin with a 10% NaOH solution removed a portion of the organic fouling contained in the resin. This method lowered the organic fouling, removed all particulate fouling, and will allow the resin to function optimally going forward.

For RTI,
Joel Shulman
Laboratory Manager
jshulman@rtiservices.com
215-682-7099 Ext. 09

October 26, 2021

APPENDIX

D LAB REPORTS FOR GROUNDWATER MONITORING (2021)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

May 18, 2021

Eric Johnson
WSP USA
13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171

RE: Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 11, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP
Pam Robertson, WSP USA

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92537976001	**MW-27D**	Water	05/09/21 10:45	05/11/21 11:40
92537976002	**MW-3**	Water	05/09/21 11:00	05/11/21 11:40
92537976003	**MW-43**	Water	05/09/21 11:15	05/11/21 11:40
92537976004	**MW-39**	Water	05/09/21 11:35	05/11/21 11:40
92537976005	**MW-42**	Water	05/09/21 11:45	05/11/21 11:40
92537976006	**MW-18**	Water	05/09/21 12:00	05/11/21 11:40
92537976007	**MW-40D**	Water	05/09/21 13:05	05/11/21 11:40
92537976008	**MW-38R**	Water	05/09/21 13:25	05/11/21 11:40
92537976009	**MW-44**	Water	05/09/21 14:25	05/11/21 11:40
92537976010	**MW-21D**	Water	05/09/21 14:50	05/11/21 11:40
92537976011	**MW-41D**	Water	05/09/21 15:05	05/11/21 11:40
92537976012	**MW-1D**	Water	05/09/21 15:50	05/11/21 11:40
92537976013	**MW-1**	Water	05/09/21 16:00	05/11/21 11:40
92537976014	**MW-22D**	Water	05/09/21 16:20	05/11/21 11:40
92537976015	**MW-20**	Water	05/09/21 16:40	05/11/21 11:40
92537976016	**DUP-20210509A**	Water	05/09/21 08:00	05/11/21 11:40
92537976017	**MW-4**	Water	05/09/21 16:55	05/11/21 11:40
92537976018	**MW-9**	Water	05/09/21 17:05	05/11/21 11:40
92537976019	**MW-23D**	Water	05/09/21 17:15	05/11/21 11:40
92537976020	**MW-16**	Water	05/09/21 17:50	05/11/21 11:40
92537976021	**MW-16D**	Water	05/09/21 18:00	05/11/21 11:40
92537976022	**DUP-20210509B**	Water	05/09/21 09:00	05/11/21 11:40
92537976023	**TRIP BLANK A**	Water	05/09/21 00:00	05/11/21 11:40

Pace Analytical Services, LLC
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(704)875-9092

SAMPLE ANALYTE COUNT

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92537976001	**MW-27D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976002	**MW-3**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976003	**MW-43**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976004	**MW-39**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976005	**MW-42**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976006	**MW-18**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976007	**MW-40D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976008	**MW-38R**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976009	**MW-44**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976010	**MW-21D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976011	**MW-41D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976012	**MW-1D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976013	**MW-1**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976014	**MW-22D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976015	**MW-20**	EPA 8260D	BSH	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976016	**DUP-20210509A**	EPA 8260D	BSH	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976017	**MW-4**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976018	**MW-9**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976019	**MW-23D**	EPA 8260D	CL	63	PASI-C

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260D Mod.	LMB	3	PASI-C
92537976020	**MW-16**	EPA 8260D	BSH	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976021	**MW-16D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976022	**DUP-20210509B**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537976023	**TRIP BLANK A**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-27D **Lab ID: 92537976001** Collected: 05/09/21 10:45 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 22:41	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 22:41	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 22:41	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 22:41	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 22:41	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 22:41	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 22:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 22:41	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 22:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 22:41	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 22:41	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 22:41	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 22:41	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 22:41	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 22:41	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 22:41	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 22:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 22:41	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 22:41	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:41	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:41	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:41	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 22:41	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 22:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 22:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 22:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 22:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 22:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 22:41	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 22:41	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 22:41	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 22:41	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 22:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 22:41	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 22:41	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 22:41	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 22:41	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 22:41	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 22:41	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 22:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 22:41	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 22:41	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 22:41	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 22:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 22:41	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 22:41	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-27D **Lab ID: 92537976001** Collected: 05/09/21 10:45 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 22:41	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 22:41	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:41	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 22:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 22:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 22:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 22:41	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 22:41	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 22:41	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 22:41	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 22:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 22:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 22:41	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 22:41	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/12/21 22:41	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 22:41	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/11/21 16:32	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/11/21 16:32	17060-07-0	
Toluene-d8 (S)	95	%	66-133	1		05/11/21 16:32	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-3 **Lab ID: 92537976002** Collected: 05/09/21 11:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 22:59	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 22:59	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 22:59	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 22:59	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 22:59	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 22:59	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 22:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 22:59	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 22:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 22:59	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 22:59	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 22:59	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 22:59	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 22:59	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 22:59	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 22:59	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 22:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 22:59	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 22:59	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:59	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:59	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:59	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 22:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 22:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 22:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 22:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 22:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 22:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 22:59	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 22:59	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 22:59	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 22:59	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 22:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 22:59	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 22:59	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 22:59	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 22:59	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 22:59	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 22:59	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 22:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 22:59	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 22:59	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 22:59	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 22:59	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 22:59	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 22:59	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-3 **Lab ID: 92537976002** Collected: 05/09/21 11:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 22:59	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 22:59	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:59	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 22:59	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 22:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 22:59	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 22:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 22:59	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 22:59	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 22:59	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 22:59	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 22:59	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 22:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 22:59	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/12/21 22:59	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/12/21 22:59	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 22:59	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/11/21 16:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		05/11/21 16:51	17060-07-0	
Toluene-d8 (S)	95	%	66-133	1		05/11/21 16:51	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-43 **Lab ID: 92537976003** Collected: 05/09/21 11:15 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 23:17	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 23:17	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 23:17	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 23:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 23:17	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 23:17	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 23:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 23:17	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 23:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 23:17	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 23:17	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 23:17	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 23:17	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 23:17	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 23:17	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 23:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 23:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 23:17	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 23:17	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:17	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:17	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:17	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 23:17	75-71-8	
1,1-Dichloroethane	**2.7**	ug/L	1.0	1		05/12/21 23:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 23:17	107-06-2	
1,1-Dichloroethene	**31.7**	ug/L	1.0	1		05/12/21 23:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:17	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:17	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:17	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:17	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:17	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 23:17	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 23:17	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 23:17	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 23:17	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 23:17	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 23:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 23:17	108-10-1	
Methyl-tert-butyl ether	**2.7**	ug/L	1.0	1		05/12/21 23:17	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 23:17	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 23:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 23:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 23:17	79-34-5	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-43 **Lab ID: 92537976003** Collected: 05/09/21 11:15 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 23:17	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 23:17	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:17	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:17	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 23:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 23:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 23:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 23:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 23:17	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 23:17	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 23:17	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 23:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 23:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 23:17	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 23:17	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/12/21 23:17	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/12/21 23:17	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**34.1**	ug/L	2.0	1		05/11/21 17:11	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/11/21 17:11	17060-07-0	
Toluene-d8 (S)	94	%	66-133	1		05/11/21 17:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-39 **Lab ID: 92537976004** Collected: 05/09/21 11:35 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 23:35	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 23:35	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 23:35	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 23:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 23:35	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 23:35	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 23:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 23:35	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 23:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 23:35	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 23:35	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 23:35	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 23:35	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 23:35	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 23:35	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 23:35	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 23:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 23:35	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 23:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:35	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 23:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 23:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 23:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:35	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:35	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:35	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:35	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:35	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 23:35	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 23:35	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 23:35	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 23:35	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 23:35	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 23:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 23:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 23:35	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 23:35	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 23:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 23:35	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 23:35	79-34-5	

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-39 **Lab ID: 92537976004** Collected: 05/09/21 11:35 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 23:35	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 23:35	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:35	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:35	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 23:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 23:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 23:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 23:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 23:35	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 23:35	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 23:35	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 23:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 23:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 23:35	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 23:35	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/12/21 23:35	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 23:35	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/11/21 17:30	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		05/11/21 17:30	17060-07-0	
Toluene-d8 (S)	93	%	66-133	1		05/11/21 17:30	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-42 **Lab ID: 92537976005** Collected: 05/09/21 11:45 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 23:54	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 23:54	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 23:54	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 23:54	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 23:54	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 23:54	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 23:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 23:54	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 23:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 23:54	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 23:54	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 23:54	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 23:54	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 23:54	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 23:54	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 23:54	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 23:54	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 23:54	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 23:54	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:54	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:54	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:54	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 23:54	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 23:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 23:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 23:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:54	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:54	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 23:54	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:54	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 23:54	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 23:54	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 23:54	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 23:54	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 23:54	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 23:54	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 23:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 23:54	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 23:54	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 23:54	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 23:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 23:54	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 23:54	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-42 **Lab ID: 92537976005** Collected: 05/09/21 11:45 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 23:54	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 23:54	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:54	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 23:54	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 23:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 23:54	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 23:54	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 23:54	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 23:54	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 23:54	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 23:54	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 23:54	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 23:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 23:54	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/12/21 23:54	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130	1		05/12/21 23:54	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 23:54	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**13.3**	ug/L	2.0	1		05/12/21 03:28	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	86	%	70-130	1		05/12/21 03:28	17060-07-0	
Toluene-d8 (S)	109	%	66-133	1		05/12/21 03:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-18 **Lab ID: 92537976006** Collected: 05/09/21 12:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/13/21 00:12	67-64-1	
Benzene	ND	ug/L	1.0	1		05/13/21 00:12	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/13/21 00:12	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/13/21 00:12	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/13/21 00:12	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/13/21 00:12	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/13/21 00:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/13/21 00:12	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/13/21 00:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/13/21 00:12	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/13/21 00:12	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/13/21 00:12	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/13/21 00:12	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/13/21 00:12	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/13/21 00:12	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/13/21 00:12	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/13/21 00:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/13/21 00:12	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/13/21 00:12	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:12	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:12	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:12	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/13/21 00:12	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/13/21 00:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/13/21 00:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:12	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:12	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:12	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:12	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:12	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/13/21 00:12	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/13/21 00:12	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/13/21 00:12	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/13/21 00:12	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/13/21 00:12	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/13/21 00:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/13/21 00:12	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/13/21 00:12	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/13/21 00:12	91-20-3	
Styrene	ND	ug/L	1.0	1		05/13/21 00:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/13/21 00:12	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/13/21 00:12	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-18 **Lab ID: 92537976006** Collected: 05/09/21 12:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/13/21 00:12	127-18-4	
Toluene	ND	ug/L	1.0	1		05/13/21 00:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:12	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/13/21 00:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/13/21 00:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/13/21 00:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/13/21 00:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/13/21 00:12	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/13/21 00:12	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/13/21 00:12	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/13/21 00:12	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/13/21 00:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/13/21 00:12	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/13/21 00:12	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/13/21 00:12	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/13/21 00:12	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/12/21 03:47	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	88	%	70-130	1		05/12/21 03:47	17060-07-0	
Toluene-d8 (S)	108	%	66-133	1		05/12/21 03:47	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-40D **Lab ID: 92537976007** Collected: 05/09/21 13:05 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/13/21 00:30	67-64-1	
Benzene	ND	ug/L	1.0	1		05/13/21 00:30	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/13/21 00:30	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/13/21 00:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/13/21 00:30	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/13/21 00:30	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/13/21 00:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/13/21 00:30	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/13/21 00:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/13/21 00:30	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/13/21 00:30	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/13/21 00:30	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/13/21 00:30	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/13/21 00:30	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/13/21 00:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/13/21 00:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/13/21 00:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/13/21 00:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/13/21 00:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:30	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/13/21 00:30	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/13/21 00:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/13/21 00:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:30	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:30	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:30	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:30	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/13/21 00:30	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/13/21 00:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/13/21 00:30	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/13/21 00:30	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/13/21 00:30	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/13/21 00:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/13/21 00:30	108-10-1	
Methyl-tert-butyl ether	**2.7**	ug/L	1.0	1		05/13/21 00:30	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/13/21 00:30	91-20-3	
Styrene	ND	ug/L	1.0	1		05/13/21 00:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/13/21 00:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/13/21 00:30	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-40D **Lab ID: 92537976007** Collected: 05/09/21 13:05 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/13/21 00:30	127-18-4	
Toluene	ND	ug/L	1.0	1		05/13/21 00:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/13/21 00:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/13/21 00:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/13/21 00:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/13/21 00:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/13/21 00:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/13/21 00:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/13/21 00:30	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/13/21 00:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/13/21 00:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/13/21 00:30	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/13/21 00:30	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/13/21 00:30	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/13/21 00:30	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/12/21 04:06	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	88	%	70-130	1		05/12/21 04:06	17060-07-0	
Toluene-d8 (S)	107	%	66-133	1		05/12/21 04:06	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-38R **Lab ID: 92537976008** Collected: 05/09/21 13:25 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/13/21 00:48	67-64-1	
Benzene	ND	ug/L	1.0	1		05/13/21 00:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/13/21 00:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/13/21 00:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/13/21 00:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/13/21 00:48	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/13/21 00:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/13/21 00:48	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/13/21 00:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/13/21 00:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/13/21 00:48	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/13/21 00:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/13/21 00:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/13/21 00:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/13/21 00:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/13/21 00:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/13/21 00:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/13/21 00:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/13/21 00:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/13/21 00:48	75-71-8	
1,1-Dichloroethane	**5.5**	ug/L	1.0	1		05/13/21 00:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/13/21 00:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/13/21 00:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/13/21 00:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/13/21 00:48	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/13/21 00:48	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/13/21 00:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/13/21 00:48	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/13/21 00:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/13/21 00:48	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/13/21 00:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/13/21 00:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/13/21 00:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/13/21 00:48	91-20-3	
Styrene	ND	ug/L	1.0	1		05/13/21 00:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/13/21 00:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/13/21 00:48	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-38R **Lab ID: 92537976008** Collected: 05/09/21 13:25 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/13/21 00:48	127-18-4	
Toluene	ND	ug/L	1.0	1		05/13/21 00:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/13/21 00:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/13/21 00:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/13/21 00:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/13/21 00:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/13/21 00:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/13/21 00:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/13/21 00:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/13/21 00:48	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/13/21 00:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/13/21 00:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/13/21 00:48	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/13/21 00:48	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		05/13/21 00:48	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/13/21 00:48	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**47.0**	ug/L	2.0	1		05/12/21 04:25	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	88	%	70-130	1		05/12/21 04:25	17060-07-0	
Toluene-d8 (S)	108	%	66-133	1		05/12/21 04:25	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-44 **Lab ID: 92537976009** Collected: 05/09/21 14:25 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 02:11	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 02:11	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 02:11	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 02:11	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 02:11	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 02:11	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 02:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 02:11	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 02:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 02:11	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 02:11	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 02:11	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 02:11	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 02:11	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 02:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 02:11	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 02:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 02:11	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 02:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:11	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 02:11	75-71-8	
1,1-Dichloroethane	**1.7**	ug/L	1.0	1		05/12/21 02:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 02:11	107-06-2	
1,1-Dichloroethene	**2.9**	ug/L	1.0	1		05/12/21 02:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:11	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:11	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:11	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:11	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 02:11	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 02:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 02:11	87-68-3	v1
2-Hexanone	ND	ug/L	5.0	1		05/12/21 02:11	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 02:11	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 02:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 02:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 02:11	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 02:11	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 02:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 02:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 02:11	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-44 **Lab ID: 92537976009** Collected: 05/09/21 14:25 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 02:11	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 02:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:11	120-82-1	
1,1,1-Trichloroethane	**6.9**	ug/L	1.0	1		05/12/21 02:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 02:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 02:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 02:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 02:11	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 02:11	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 02:11	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 02:11	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 02:11	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 02:11	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 02:11	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130	1		05/12/21 02:11	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 02:11	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**10.2**	ug/L	2.0	1		05/12/21 04:44	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	90	%	70-130	1		05/12/21 04:44	17060-07-0	
Toluene-d8 (S)	107	%	66-133	1		05/12/21 04:44	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-21D **Lab ID: 92537976010** Collected: 05/09/21 14:50 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 02:29	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 02:29	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 02:29	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 02:29	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 02:29	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 02:29	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 02:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 02:29	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 02:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 02:29	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 02:29	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 02:29	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 02:29	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 02:29	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 02:29	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 02:29	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 02:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 02:29	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 02:29	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:29	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:29	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:29	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 02:29	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 02:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 02:29	107-06-2	
1,1-Dichloroethene	**4.1**	ug/L	1.0	1		05/12/21 02:29	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:29	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:29	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:29	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:29	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:29	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 02:29	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 02:29	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 02:29	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 02:29	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 02:29	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 02:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 02:29	108-10-1	
Methyl-tert-butyl ether	**2.6**	ug/L	1.0	1		05/12/21 02:29	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 02:29	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 02:29	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 02:29	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 02:29	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-21D **Lab ID: 92537976010** Collected: 05/09/21 14:50 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 02:29	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 02:29	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:29	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 02:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 02:29	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 02:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 02:29	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 02:29	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 02:29	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 02:29	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 02:29	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 02:29	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 02:29	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/12/21 02:29	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/12/21 02:29	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		05/12/21 02:29	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**2.8**	ug/L	2.0	1		05/12/21 05:03	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	83	%	70-130	1		05/12/21 05:03	17060-07-0	
Toluene-d8 (S)	107	%	66-133	1		05/12/21 05:03	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-41D **Lab ID: 92537976011** Collected: 05/09/21 15:05 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 02:47	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 02:47	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 02:47	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 02:47	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 02:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 02:47	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 02:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 02:47	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 02:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 02:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 02:47	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 02:47	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 02:47	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 02:47	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 02:47	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 02:47	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 02:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 02:47	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 02:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:47	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:47	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:47	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 02:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 02:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 02:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 02:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:47	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:47	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 02:47	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:47	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 02:47	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 02:47	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 02:47	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 02:47	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 02:47	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 02:47	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 02:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 02:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 02:47	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 02:47	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 02:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 02:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 02:47	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-41D **Lab ID: 92537976011** Collected: 05/09/21 15:05 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 02:47	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 02:47	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:47	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 02:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 02:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 02:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 02:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 02:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 02:47	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 02:47	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 02:47	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 02:47	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 02:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 02:47	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/12/21 02:47	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-130	1		05/12/21 02:47	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 02:47	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/12/21 05:22	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	88	%	70-130	1		05/12/21 05:22	17060-07-0	
Toluene-d8 (S)	108	%	66-133	1		05/12/21 05:22	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-1D **Lab ID: 92537976012** Collected: 05/09/21 15:50 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 03:05	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 03:05	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 03:05	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 03:05	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 03:05	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 03:05	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 03:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 03:05	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 03:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 03:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 03:05	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 03:05	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 03:05	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 03:05	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 03:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 03:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 03:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 03:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 03:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 03:05	75-71-8	
1,1-Dichloroethane	**1.8**	ug/L	1.0	1		05/12/21 03:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 03:05	107-06-2	
1,1-Dichloroethene	**12.2**	ug/L	1.0	1		05/12/21 03:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:05	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 03:05	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 03:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 03:05	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 03:05	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 03:05	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 03:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 03:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 03:05	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 03:05	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 03:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 03:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 03:05	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-1D **Lab ID: 92537976012** Collected: 05/09/21 15:50 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 03:05	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 03:05	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 03:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 03:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 03:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 03:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 03:05	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 03:05	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 03:05	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 03:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 03:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 03:05	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/12/21 03:05	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/12/21 03:05	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 03:05	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**9.0**	ug/L	2.0	1		05/12/21 05:41	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	87	%	70-130	1		05/12/21 05:41	17060-07-0	
Toluene-d8 (S)	108	%	66-133	1		05/12/21 05:41	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-1 **Lab ID: 92537976013** Collected: 05/09/21 16:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 03:24	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 03:24	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 03:24	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 03:24	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 03:24	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 03:24	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 03:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 03:24	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 03:24	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 03:24	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 03:24	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 03:24	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 03:24	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 03:24	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 03:24	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 03:24	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 03:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 03:24	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 03:24	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:24	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 03:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 03:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 03:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:24	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:24	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:24	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:24	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:24	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 03:24	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 03:24	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 03:24	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 03:24	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 03:24	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 03:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 03:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 03:24	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 03:24	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 03:24	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 03:24	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 03:24	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-1 **Lab ID: 92537976013** Collected: 05/09/21 16:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 03:24	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 03:24	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:24	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 03:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 03:24	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 03:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 03:24	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 03:24	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 03:24	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 03:24	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 03:24	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 03:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 03:24	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 03:24	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130	1		05/12/21 03:24	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/12/21 03:24	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/12/21 06:00	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	87	%	70-130	1		05/12/21 06:00	17060-07-0	
Toluene-d8 (S)	106	%	66-133	1		05/12/21 06:00	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-22D **Lab ID: 92537976014** Collected: 05/09/21 16:20 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 03:42	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 03:42	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 03:42	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 03:42	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 03:42	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 03:42	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 03:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 03:42	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 03:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 03:42	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 03:42	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 03:42	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 03:42	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 03:42	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 03:42	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 03:42	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 03:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 03:42	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 03:42	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:42	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:42	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:42	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 03:42	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 03:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 03:42	107-06-2	
1,1-Dichloroethene	**5.9**	ug/L	1.0	1		05/12/21 03:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 03:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:42	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:42	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 03:42	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:42	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 03:42	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 03:42	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 03:42	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 03:42	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 03:42	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 03:42	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 03:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 03:42	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 03:42	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 03:42	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 03:42	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 03:42	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 03:42	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-22D **Lab ID: 92537976014** Collected: 05/09/21 16:20 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 03:42	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 03:42	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:42	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 03:42	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 03:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 03:42	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 03:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 03:42	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 03:42	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 03:42	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 03:42	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 03:42	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 03:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 03:42	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 03:42	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130	1		05/12/21 03:42	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/12/21 03:42	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**4.0**	ug/L	2.0	1		05/12/21 06:19	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	87	%	70-130	1		05/12/21 06:19	17060-07-0	
Toluene-d8 (S)	108	%	66-133	1		05/12/21 06:19	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-20 **Lab ID: 92537976015** Collected: 05/09/21 16:40 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		05/13/21 17:39	67-64-1	v1
Benzene	ND	ug/L	2.0	2		05/13/21 17:39	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/13/21 17:39	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/13/21 17:39	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/13/21 17:39	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/13/21 17:39	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/13/21 17:39	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	10.0	2		05/13/21 17:39	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/13/21 17:39	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/13/21 17:39	108-90-7	
Chloroethane	ND	ug/L	2.0	2		05/13/21 17:39	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/13/21 17:39	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/13/21 17:39	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:39	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:39	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		05/13/21 17:39	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/13/21 17:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/13/21 17:39	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/13/21 17:39	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:39	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:39	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:39	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/13/21 17:39	75-71-8	
1,1-Dichloroethane	**214**	ug/L	2.0	2		05/13/21 17:39	75-34-3	
1,2-Dichloroethane	**7.5**	ug/L	2.0	2		05/13/21 17:39	107-06-2	
1,1-Dichloroethene	**267**	ug/L	2.0	2		05/13/21 17:39	75-35-4	
cis-1,2-Dichloroethene	**2.2**	ug/L	2.0	2		05/13/21 17:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/13/21 17:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:39	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:39	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:39	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:39	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:39	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/13/21 17:39	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/13/21 17:39	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		05/13/21 17:39	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		05/13/21 17:39	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		05/13/21 17:39	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/13/21 17:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/13/21 17:39	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/13/21 17:39	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/13/21 17:39	91-20-3	
Styrene	ND	ug/L	2.0	2		05/13/21 17:39	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:39	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:39	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-20 **Lab ID: 92537976015** Collected: 05/09/21 16:40 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.0	2		05/13/21 17:39	127-18-4	
Toluene	ND	ug/L	2.0	2		05/13/21 17:39	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:39	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:39	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	2		05/13/21 17:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/13/21 17:39	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		05/13/21 17:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/13/21 17:39	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/13/21 17:39	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/13/21 17:39	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		05/13/21 17:39	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/13/21 17:39	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/13/21 17:39	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/13/21 17:39	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	2		05/13/21 17:39	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	2		05/13/21 17:39	17060-07-0	
Toluene-d8 (S)	98	%	70-130	2		05/13/21 17:39	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**1010**	ug/L	40.0	20		05/12/21 14:29	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	110	%	70-130	20		05/12/21 14:29	17060-07-0	
Toluene-d8 (S)	94	%	66-133	20		05/12/21 14:29	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: DUP-20210509A **Lab ID: 92537976016** Collected: 05/09/21 08:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	62.5	2.5		05/13/21 18:33	67-64-1	v1
Benzene	ND	ug/L	2.5	2.5		05/13/21 18:33	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		05/13/21 18:33	74-97-5	
Bromodichloromethane	ND	ug/L	2.5	2.5		05/13/21 18:33	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		05/13/21 18:33	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		05/13/21 18:33	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	12.5	2.5		05/13/21 18:33	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		05/13/21 18:33	56-23-5	
Chlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	108-90-7	
Chloroethane	ND	ug/L	2.5	2.5		05/13/21 18:33	75-00-3	
Chloroform	ND	ug/L	12.5	2.5		05/13/21 18:33	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		05/13/21 18:33	74-87-3	
2-Chlorotoluene	ND	ug/L	2.5	2.5		05/13/21 18:33	95-49-8	
4-Chlorotoluene	ND	ug/L	2.5	2.5		05/13/21 18:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5		05/13/21 18:33	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		05/13/21 18:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.5	2.5		05/13/21 18:33	106-93-4	
Dibromomethane	ND	ug/L	2.5	2.5		05/13/21 18:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		05/13/21 18:33	75-71-8	
1,1-Dichloroethane	**207**	ug/L	2.5	2.5		05/13/21 18:33	75-34-3	
1,2-Dichloroethane	**7.9**	ug/L	2.5	2.5		05/13/21 18:33	107-06-2	
1,1-Dichloroethene	**262**	ug/L	2.5	2.5		05/13/21 18:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/13/21 18:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/13/21 18:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		05/13/21 18:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/13/21 18:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/13/21 18:33	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		05/13/21 18:33	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	2.5		05/13/21 18:33	87-68-3	
2-Hexanone	ND	ug/L	12.5	2.5		05/13/21 18:33	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.5	2.5		05/13/21 18:33	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		05/13/21 18:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		05/13/21 18:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		05/13/21 18:33	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		05/13/21 18:33	91-20-3	
Styrene	ND	ug/L	2.5	2.5		05/13/21 18:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/13/21 18:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/13/21 18:33	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: DUP-20210509A **Lab ID: 92537976016** Collected: 05/09/21 08:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.5	2.5		05/13/21 18:33	127-18-4	
Toluene	ND	ug/L	2.5	2.5		05/13/21 18:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.5	2.5		05/13/21 18:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		05/13/21 18:33	79-00-5	
Trichloroethene	ND	ug/L	2.5	2.5		05/13/21 18:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		05/13/21 18:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:33	96-18-4	
Vinyl acetate	ND	ug/L	5.0	2.5		05/13/21 18:33	108-05-4	
Vinyl chloride	ND	ug/L	2.5	2.5		05/13/21 18:33	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		05/13/21 18:33	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		05/13/21 18:33	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		05/13/21 18:33	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	2.5		05/13/21 18:33	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	2.5		05/13/21 18:33	17060-07-0	
Toluene-d8 (S)	104	%	70-130	2.5		05/13/21 18:33	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**955**	ug/L	40.0	20		05/12/21 14:49	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%	70-130	20		05/12/21 14:49	17060-07-0	
Toluene-d8 (S)	93	%	66-133	20		05/12/21 14:49	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-4 **Lab ID: 92537976017** Collected: 05/09/21 16:55 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	62.5	2.5		05/15/21 01:10	67-64-1	
Benzene	ND	ug/L	2.5	2.5		05/15/21 01:10	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		05/15/21 01:10	74-97-5	IK
Bromodichloromethane	ND	ug/L	2.5	2.5		05/15/21 01:10	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		05/15/21 01:10	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		05/15/21 01:10	74-83-9	IH,v1
2-Butanone (MEK)	ND	ug/L	12.5	2.5		05/15/21 01:10	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		05/15/21 01:10	56-23-5	
Chlorobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	108-90-7	
Chloroethane	ND	ug/L	2.5	2.5		05/15/21 01:10	75-00-3	
Chloroform	ND	ug/L	12.5	2.5		05/15/21 01:10	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		05/15/21 01:10	74-87-3	
2-Chlorotoluene	ND	ug/L	2.5	2.5		05/15/21 01:10	95-49-8	
4-Chlorotoluene	ND	ug/L	2.5	2.5		05/15/21 01:10	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5		05/15/21 01:10	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		05/15/21 01:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.5	2.5		05/15/21 01:10	106-93-4	
Dibromomethane	ND	ug/L	2.5	2.5		05/15/21 01:10	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		05/15/21 01:10	75-71-8	
1,1-Dichloroethane	**130**	ug/L	2.5	2.5		05/15/21 01:10	75-34-3	
1,2-Dichloroethane	**2.9**	ug/L	2.5	2.5		05/15/21 01:10	107-06-2	
1,1-Dichloroethene	**361**	ug/L	2.5	2.5		05/15/21 01:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/15/21 01:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/15/21 01:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		05/15/21 01:10	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		05/15/21 01:10	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.5	2.5		05/15/21 01:10	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		05/15/21 01:10	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/15/21 01:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/15/21 01:10	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		05/15/21 01:10	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	2.5		05/15/21 01:10	87-68-3	
2-Hexanone	ND	ug/L	12.5	2.5		05/15/21 01:10	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.5	2.5		05/15/21 01:10	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		05/15/21 01:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		05/15/21 01:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		05/15/21 01:10	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		05/15/21 01:10	91-20-3	
Styrene	ND	ug/L	2.5	2.5		05/15/21 01:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/15/21 01:10	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/15/21 01:10	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-4 **Lab ID: 92537976017** Collected: 05/09/21 16:55 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.5	2.5		05/15/21 01:10	127-18-4	
Toluene	ND	ug/L	2.5	2.5		05/15/21 01:10	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		05/15/21 01:10	120-82-1	
1,1,1-Trichloroethane	**3.4**	ug/L	2.5	2.5		05/15/21 01:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		05/15/21 01:10	79-00-5	
Trichloroethene	ND	ug/L	2.5	2.5		05/15/21 01:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		05/15/21 01:10	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		05/15/21 01:10	96-18-4	
Vinyl acetate	ND	ug/L	5.0	2.5		05/15/21 01:10	108-05-4	
Vinyl chloride	ND	ug/L	2.5	2.5		05/15/21 01:10	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		05/15/21 01:10	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		05/15/21 01:10	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		05/15/21 01:10	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-130	2.5		05/15/21 01:10	460-00-4	
1,2-Dichloroethane-d4 (S)	85	%	70-130	2.5		05/15/21 01:10	17060-07-0	
Toluene-d8 (S)	106	%	70-130	2.5		05/15/21 01:10	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**303**	ug/L	10.0	5		05/12/21 15:09	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%	70-130	5		05/12/21 15:09	17060-07-0	
Toluene-d8 (S)	93	%	66-133	5		05/12/21 15:09	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-9 **Lab ID: 92537976018** Collected: 05/09/21 17:05 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 04:54	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 04:54	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 04:54	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 04:54	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 04:54	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 04:54	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 04:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 04:54	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 04:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 04:54	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 04:54	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 04:54	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 04:54	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 04:54	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 04:54	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 04:54	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 04:54	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 04:54	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 04:54	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 04:54	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 04:54	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 04:54	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 04:54	75-71-8	
1,1-Dichloroethane	**3.0**	ug/L	1.0	1		05/12/21 04:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 04:54	107-06-2	
1,1-Dichloroethene	**56.3**	ug/L	1.0	1		05/12/21 04:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 04:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 04:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 04:54	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 04:54	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 04:54	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 04:54	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 04:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 04:54	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 04:54	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 04:54	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 04:54	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 04:54	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 04:54	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 04:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 04:54	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 04:54	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 04:54	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 04:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 04:54	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 04:54	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-9 **Lab ID: 92537976018** Collected: 05/09/21 17:05 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 04:54	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 04:54	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 04:54	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 04:54	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 04:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 04:54	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 04:54	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 04:54	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 04:54	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 04:54	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 04:54	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 04:54	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 04:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 04:54	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/12/21 04:54	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/12/21 04:54	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 04:54	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**23.6**	ug/L	2.0	1		05/12/21 07:35	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	87	%	70-130	1		05/12/21 07:35	17060-07-0	
Toluene-d8 (S)	107	%	66-133	1		05/12/21 07:35	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-23D **Lab ID: 92537976019** Collected: 05/09/21 17:15 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 05:12	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 05:12	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 05:12	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 05:12	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 05:12	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 05:12	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 05:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 05:12	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 05:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 05:12	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 05:12	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 05:12	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 05:12	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 05:12	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 05:12	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 05:12	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 05:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 05:12	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 05:12	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:12	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:12	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:12	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 05:12	75-71-8	
1,1-Dichloroethane	**31.8**	ug/L	1.0	1		05/12/21 05:12	75-34-3	
1,2-Dichloroethane	**1.5**	ug/L	1.0	1		05/12/21 05:12	107-06-2	
1,1-Dichloroethene	**126**	ug/L	1.0	1		05/12/21 05:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 05:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 05:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 05:12	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 05:12	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 05:12	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 05:12	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 05:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 05:12	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 05:12	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 05:12	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 05:12	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 05:12	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 05:12	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 05:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 05:12	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 05:12	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 05:12	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 05:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 05:12	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 05:12	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-23D **Lab ID: 92537976019** Collected: 05/09/21 17:15 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 05:12	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 05:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:12	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:12	120-82-1	
1,1,1-Trichloroethane	**11.7**	ug/L	1.0	1		05/12/21 05:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 05:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 05:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 05:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 05:12	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 05:12	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 05:12	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 05:12	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 05:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 05:12	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 05:12	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/12/21 05:12	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 05:12	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**99.0**	ug/L	2.0	1		05/12/21 07:54	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	90	%	70-130	1		05/12/21 07:54	17060-07-0	
Toluene-d8 (S)	105	%	66-133	1		05/12/21 07:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-16 **Lab ID: 92537976020** Collected: 05/09/21 17:50 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		05/13/21 17:57	67-64-1	v1
Benzene	ND	ug/L	2.0	2		05/13/21 17:57	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/13/21 17:57	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/13/21 17:57	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/13/21 17:57	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/13/21 17:57	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/13/21 17:57	74-83-9	IK
2-Butanone (MEK)	**24.6**	ug/L	10.0	2		05/13/21 17:57	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/13/21 17:57	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/13/21 17:57	108-90-7	
Chloroethane	**4.2**	ug/L	2.0	2		05/13/21 17:57	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/13/21 17:57	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/13/21 17:57	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:57	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:57	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		05/13/21 17:57	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/13/21 17:57	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/13/21 17:57	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/13/21 17:57	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:57	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:57	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:57	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/13/21 17:57	75-71-8	
1,1-Dichloroethane	**169**	ug/L	2.0	2		05/13/21 17:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		05/13/21 17:57	107-06-2	
1,1-Dichloroethene	**276**	ug/L	2.0	2		05/13/21 17:57	75-35-4	
cis-1,2-Dichloroethene	**2.1**	ug/L	2.0	2		05/13/21 17:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/13/21 17:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:57	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:57	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:57	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:57	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:57	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/13/21 17:57	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/13/21 17:57	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		05/13/21 17:57	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		05/13/21 17:57	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		05/13/21 17:57	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/13/21 17:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/13/21 17:57	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/13/21 17:57	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/13/21 17:57	91-20-3	
Styrene	ND	ug/L	2.0	2		05/13/21 17:57	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:57	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:57	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-16 **Lab ID: 92537976020** Collected: 05/09/21 17:50 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	**2.2**	ug/L	2.0	2		05/13/21 17:57	127-18-4	
Toluene	ND	ug/L	2.0	2		05/13/21 17:57	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:57	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:57	120-82-1	
1,1,1-Trichloroethane	**123**	ug/L	2.0	2		05/13/21 17:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/13/21 17:57	79-00-5	
Trichloroethene	**6.2**	ug/L	2.0	2		05/13/21 17:57	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/13/21 17:57	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/13/21 17:57	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/13/21 17:57	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		05/13/21 17:57	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/13/21 17:57	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/13/21 17:57	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/13/21 17:57	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	2		05/13/21 17:57	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	2		05/13/21 17:57	17060-07-0	
Toluene-d8 (S)	100	%	70-130	2		05/13/21 17:57	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**19.3**	ug/L	2.0	1		05/12/21 08:13	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		05/12/21 08:13	17060-07-0	
Toluene-d8 (S)	104	%	66-133	1		05/12/21 08:13	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-16D **Lab ID: 92537976021** Collected: 05/09/21 18:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 05:48	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 05:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 05:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 05:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 05:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 05:48	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 05:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 05:48	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 05:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 05:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 05:48	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 05:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 05:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 05:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 05:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 05:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 05:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 05:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 05:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 05:48	75-71-8	
1,1-Dichloroethane	**27.7**	ug/L	1.0	1		05/12/21 05:48	75-34-3	
1,2-Dichloroethane	**1.7**	ug/L	1.0	1		05/12/21 05:48	107-06-2	
1,1-Dichloroethene	**130**	ug/L	1.0	1		05/12/21 05:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 05:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 05:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 05:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 05:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 05:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 05:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 05:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 05:48	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 05:48	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 05:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 05:48	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 05:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 05:48	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 05:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 05:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 05:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 05:48	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 05:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 05:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 05:48	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: MW-16D **Lab ID: 92537976021** Collected: 05/09/21 18:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 05:48	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 05:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 05:48	120-82-1	
1,1,1-Trichloroethane	**9.5**	ug/L	1.0	1		05/12/21 05:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 05:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 05:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 05:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 05:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 05:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 05:48	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 05:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 05:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 05:48	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/12/21 05:48	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/12/21 05:48	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/12/21 05:48	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**107**	ug/L	4.0	2		05/12/21 15:28	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	70-130	2		05/12/21 15:28	17060-07-0	
Toluene-d8 (S)	93	%	66-133	2		05/12/21 15:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: DUP-20210509B **Lab ID: 92537976022** Collected: 05/09/21 09:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 06:07	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 06:07	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 06:07	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 06:07	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 06:07	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 06:07	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 06:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 06:07	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 06:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 06:07	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 06:07	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 06:07	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 06:07	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 06:07	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 06:07	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 06:07	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 06:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 06:07	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 06:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 06:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 06:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 06:07	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 06:07	75-71-8	
1,1-Dichloroethane	**26.4**	ug/L	1.0	1		05/12/21 06:07	75-34-3	
1,2-Dichloroethane	**1.6**	ug/L	1.0	1		05/12/21 06:07	107-06-2	
1,1-Dichloroethene	**117**	ug/L	1.0	1		05/12/21 06:07	75-35-4	M1
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 06:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 06:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 06:07	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 06:07	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 06:07	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 06:07	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 06:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 06:07	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 06:07	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 06:07	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 06:07	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 06:07	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 06:07	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 06:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 06:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 06:07	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 06:07	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 06:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 06:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 06:07	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: DUP-20210509B **Lab ID: 92537976022** Collected: 05/09/21 09:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 06:07	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 06:07	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 06:07	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 06:07	120-82-1	
1,1,1-Trichloroethane	**8.7**	ug/L	1.0	1		05/12/21 06:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 06:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 06:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 06:07	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 06:07	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 06:07	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 06:07	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 06:07	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 06:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 06:07	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/12/21 06:07	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/12/21 06:07	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 06:07	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**111**	ug/L	4.0	2		05/12/21 15:48	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%	70-130	2		05/12/21 15:48	17060-07-0	
Toluene-d8 (S)	93	%	66-133	2		05/12/21 15:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: TRIP BLANK A **Lab ID: 92537976023** Collected: 05/09/21 00:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 01:53	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 01:53	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 01:53	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 01:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 01:53	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 01:53	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 01:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 01:53	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 01:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 01:53	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 01:53	75-00-3	IK
Chloroform	ND	ug/L	5.0	1		05/12/21 01:53	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 01:53	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 01:53	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 01:53	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 01:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 01:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 01:53	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 01:53	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 01:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 01:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 01:53	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 01:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/12/21 01:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 01:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/12/21 01:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 01:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 01:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 01:53	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 01:53	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 01:53	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 01:53	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 01:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 01:53	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 01:53	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 01:53	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 01:53	87-68-3	v2
2-Hexanone	ND	ug/L	5.0	1		05/12/21 01:53	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 01:53	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 01:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 01:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 01:53	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 01:53	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 01:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 01:53	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 01:53	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Sample: TRIP BLANK A **Lab ID: 92537976023** Collected: 05/09/21 00:00 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 01:53	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 01:53	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 01:53	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 01:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/12/21 01:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 01:53	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 01:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 01:53	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 01:53	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 01:53	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 01:53	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 01:53	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 01:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 01:53	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/12/21 01:53	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		05/12/21 01:53	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 01:53	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/12/21 09:48	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	90	%	70-130	1		05/12/21 09:48	17060-07-0	
Toluene-d8 (S)	107	%	66-133	1		05/12/21 09:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 619721 | Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D | Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976001, 92537976002, 92537976003, 92537976004, 92537976005, 92537976006, 92537976007, 92537976008

METHOD BLANK: 3260481 Matrix: Water
Associated Lab Samples: 92537976001, 92537976002, 92537976003, 92537976004, 92537976005, 92537976006, 92537976007, 92537976008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/12/21 17:16	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/12/21 17:16	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/12/21 17:16	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/12/21 17:16	
1,1-Dichloroethane	ug/L	ND	1.0	05/12/21 17:16	
1,1-Dichloroethene	ug/L	ND	1.0	05/12/21 17:16	
1,1-Dichloropropene	ug/L	ND	1.0	05/12/21 17:16	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/12/21 17:16	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/12/21 17:16	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/12/21 17:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	05/12/21 17:16	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/12/21 17:16	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/12/21 17:16	
1,2-Dichloroethane	ug/L	ND	1.0	05/12/21 17:16	
1,2-Dichloropropane	ug/L	ND	1.0	05/12/21 17:16	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/12/21 17:16	
1,3-Dichloropropane	ug/L	ND	1.0	05/12/21 17:16	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/12/21 17:16	
2,2-Dichloropropane	ug/L	ND	1.0	05/12/21 17:16	
2-Butanone (MEK)	ug/L	ND	5.0	05/12/21 17:16	
2-Chlorotoluene	ug/L	ND	1.0	05/12/21 17:16	
2-Hexanone	ug/L	ND	5.0	05/12/21 17:16	
4-Chlorotoluene	ug/L	ND	1.0	05/12/21 17:16	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/12/21 17:16	
Acetone	ug/L	ND	25.0	05/12/21 17:16	
Benzene	ug/L	ND	1.0	05/12/21 17:16	
Bromobenzene	ug/L	ND	1.0	05/12/21 17:16	
Bromochloromethane	ug/L	ND	1.0	05/12/21 17:16	
Bromodichloromethane	ug/L	ND	1.0	05/12/21 17:16	
Bromoform	ug/L	ND	1.0	05/12/21 17:16	
Bromomethane	ug/L	ND	2.0	05/12/21 17:16	
Carbon tetrachloride	ug/L	ND	1.0	05/12/21 17:16	
Chlorobenzene	ug/L	ND	1.0	05/12/21 17:16	
Chloroethane	ug/L	ND	1.0	05/12/21 17:16	
Chloroform	ug/L	ND	5.0	05/12/21 17:16	
Chloromethane	ug/L	ND	1.0	05/12/21 17:16	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/12/21 17:16	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/12/21 17:16	
Dibromochloromethane	ug/L	ND	1.0	05/12/21 17:16	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

METHOD BLANK: 3260481 Matrix: Water
Associated Lab Samples: 92537976001, 92537976002, 92537976003, 92537976004, 92537976005, 92537976006, 92537976007, 92537976008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/12/21 17:16	
Dichlorodifluoromethane	ug/L	ND	1.0	05/12/21 17:16	
Diisopropyl ether	ug/L	ND	1.0	05/12/21 17:16	
Ethylbenzene	ug/L	ND	1.0	05/12/21 17:16	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/12/21 17:16	
m&p-Xylene	ug/L	ND	2.0	05/12/21 17:16	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/12/21 17:16	
Methylene Chloride	ug/L	ND	5.0	05/12/21 17:16	
Naphthalene	ug/L	ND	1.0	05/12/21 17:16	
o-Xylene	ug/L	ND	1.0	05/12/21 17:16	
p-Isopropyltoluene	ug/L	ND	1.0	05/12/21 17:16	
Styrene	ug/L	ND	1.0	05/12/21 17:16	
Tetrachloroethene	ug/L	ND	1.0	05/12/21 17:16	
Toluene	ug/L	ND	1.0	05/12/21 17:16	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/12/21 17:16	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/12/21 17:16	
Trichloroethene	ug/L	ND	1.0	05/12/21 17:16	
Trichlorofluoromethane	ug/L	ND	1.0	05/12/21 17:16	
Vinyl acetate	ug/L	ND	2.0	05/12/21 17:16	
Vinyl chloride	ug/L	ND	1.0	05/12/21 17:16	
Xylene (Total)	ug/L	ND	1.0	05/12/21 17:16	
1,2-Dichloroethane-d4 (S)	%	107	70-130	05/12/21 17:16	
4-Bromofluorobenzene (S)	%	100	70-130	05/12/21 17:16	
Toluene-d8 (S)	%	101	70-130	05/12/21 17:16	

LABORATORY CONTROL SAMPLE: 3260482

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.2	100	70-130	
1,1,1-Trichloroethane	ug/L	50	50.2	100	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.3	103	70-130	
1,1,2-Trichloroethane	ug/L	50	49.9	100	70-130	
1,1-Dichloroethane	ug/L	50	50.2	100	70-130	
1,1-Dichloroethene	ug/L	50	54.2	108	70-132	
1,1-Dichloropropene	ug/L	50	50.8	102	70-131	
1,2,3-Trichlorobenzene	ug/L	50	52.0	104	70-134	
1,2,3-Trichloropropane	ug/L	50	50.7	101	70-130	
1,2,4-Trichlorobenzene	ug/L	50	51.0	102	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	50.5	101	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	50.5	101	70-130	
1,2-Dichlorobenzene	ug/L	50	49.5	99	70-130	
1,2-Dichloroethane	ug/L	50	50.5	101	70-130	
1,2-Dichloropropane	ug/L	50	52.3	105	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

LABORATORY CONTROL SAMPLE: 3260482

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	50	49.5	99	70-130	
1,3-Dichloropropane	ug/L	50	50.7	101	70-130	
1,4-Dichlorobenzene	ug/L	50	50.0	100	70-130	
2,2-Dichloropropane	ug/L	50	50.5	101	70-130	
2-Butanone (MEK)	ug/L	100	97.0	97	70-133	
2-Chlorotoluene	ug/L	50	51.1	102	70-130	
2-Hexanone	ug/L	100	104	104	70-130	
4-Chlorotoluene	ug/L	50	49.4	99	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	70-130	
Acetone	ug/L	100	108	108	70-144	
Benzene	ug/L	50	50.1	100	70-130	
Bromobenzene	ug/L	50	50.3	101	70-130	
Bromochloromethane	ug/L	50	51.9	104	70-130	
Bromodichloromethane	ug/L	50	51.7	103	70-130	
Bromoform	ug/L	50	49.8	100	70-131	
Bromomethane	ug/L	50	58.2	116	30-177	
Carbon tetrachloride	ug/L	50	51.8	104	70-130	
Chlorobenzene	ug/L	50	51.0	102	70-130	
Chloroethane	ug/L	50	42.5	85	46-131	
Chloroform	ug/L	50	52.1	104	70-130	
Chloromethane	ug/L	50	47.6	95	49-130	
cis-1,2-Dichloroethene	ug/L	50	50.8	102	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.8	102	70-130	
Dibromochloromethane	ug/L	50	50.7	101	70-130	
Dibromomethane	ug/L	50	49.9	100	70-130	
Dichlorodifluoromethane	ug/L	50	46.7	93	52-134	
Diisopropyl ether	ug/L	50	48.5	97	70-131	
Ethylbenzene	ug/L	50	50.9	102	70-130	
Hexachloro-1,3-butadiene	ug/L	50	53.4	107	70-131	
m&p-Xylene	ug/L	100	103	103	70-130	
Methyl-tert-butyl ether	ug/L	50	47.5	95	70-130	
Methylene Chloride	ug/L	50	49.4	99	68-130	
Naphthalene	ug/L	50	49.6	99	70-133	
o-Xylene	ug/L	50	50.5	101	70-130	
p-Isopropyltoluene	ug/L	50	50.4	101	70-130	
Styrene	ug/L	50	51.5	103	70-130	
Tetrachloroethene	ug/L	50	50.1	100	70-130	
Toluene	ug/L	50	50.1	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	51.1	102	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.9	102	70-130	
Trichloroethene	ug/L	50	50.7	101	70-130	
Trichlorofluoromethane	ug/L	50	56.5	113	61-130	
Vinyl acetate	ug/L	100	106	106	70-140	
Vinyl chloride	ug/L	50	47.5	95	59-142	
Xylene (Total)	ug/L	150	153	102	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

LABORATORY CONTROL SAMPLE: 3260482

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260483 3260484

Parameter	Units	92537976008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	22.5	21.6	113	108	70-135	4	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	24.7	23.7	123	119	70-148	4	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	22.8	21.8	114	109	70-131	5	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.9	22.2	114	111	70-136	3	30	
1,1-Dichloroethane	ug/L	5.5	20	20	29.7	28.4	121	115	70-147	4	30	
1,1-Dichloroethene	ug/L	ND	20	20	26.1	25.6	131	128	70-158	2	30	
1,1-Dichloropropene	ug/L	ND	20	20	24.4	23.5	122	117	70-149	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.6	22.2	113	111	68-140	2	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	22.5	22.0	113	110	67-137	3	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.8	22.2	114	111	70-139	3	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	21.3	21.4	106	107	69-136	1	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	22.6	21.9	113	109	70-137	3	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	22.8	21.8	114	109	70-133	5	30	
1,2-Dichloroethane	ug/L	ND	20	20	23.7	22.7	118	114	67-138	4	30	
1,2-Dichloropropane	ug/L	ND	20	20	24.5	24.0	123	120	70-138	2	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	23.1	22.2	116	111	70-133	4	30	
1,3-Dichloropropane	ug/L	ND	20	20	22.8	22.1	114	110	70-136	3	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	23.6	22.8	118	114	70-133	3	30	
2,2-Dichloropropane	ug/L	ND	20	20	26.0	24.3	130	122	52-155	6	30	
2-Butanone (MEK)	ug/L	ND	40	40	41.9	42.3	105	106	61-147	1	30	
2-Chlorotoluene	ug/L	ND	20	20	24.0	23.5	120	118	70-141	2	30	
2-Hexanone	ug/L	ND	40	40	43.6	43.3	109	108	67-139	1	30	
4-Chlorotoluene	ug/L	ND	20	20	23.4	22.7	117	113	70-135	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	44.8	45.9	112	115	67-136	2	30	
Acetone	ug/L	ND	40	40	46.7	47.1	117	118	55-159	1	30	
Benzene	ug/L	ND	20	20	23.8	23.1	119	115	67-150	3	30	
Bromobenzene	ug/L	ND	20	20	23.2	22.7	116	113	70-134	2	30	
Bromochloromethane	ug/L	ND	20	20	24.2	22.8	121	114	70-146	6	30	
Bromodichloromethane	ug/L	ND	20	20	23.5	23.0	117	115	70-138	2	30	
Bromoform	ug/L	ND	20	20	21.6	20.6	108	103	57-138	5	30	
Bromomethane	ug/L	ND	20	20	32.2	30.3	161	151	10-200	6	30	
Carbon tetrachloride	ug/L	ND	20	20	25.0	24.6	125	123	70-147	2	30	
Chlorobenzene	ug/L	ND	20	20	23.6	22.5	118	113	70-137	5	30	
Chloroethane	ug/L	ND	20	20	26.0	23.9	130	119	51-166	9	30	
Chloroform	ug/L	ND	20	20	24.9	24.7	124	123	70-144	1	30	
Chloromethane	ug/L	ND	20	20	22.0	21.3	110	107	24-161	3	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	23.7	23.5	118	118	67-148	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	23.1	22.7	115	114	70-142	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260483 3260484

Parameter	Units	92537976008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromochloromethane	ug/L	ND	20	20	22.8	21.6	114	108	68-138	5	30	
Dibromomethane	ug/L	ND	20	20	22.6	22.7	113	113	70-134	0	30	
Dichlorodifluoromethane	ug/L	ND	20	20	22.9	21.6	115	108	43-155	6	30	
Diisopropyl ether	ug/L	ND	20	20	22.2	21.9	111	109	65-146	1	30	
Ethylbenzene	ug/L	ND	20	20	23.8	22.6	119	113	68-143	5	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	24.9	24.1	125	121	62-151	3	30	
m&p-Xylene	ug/L	ND	40	40	47.7	45.4	119	114	53-157	5	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	22.2	21.3	111	107	59-156	4	30	
Methylene Chloride	ug/L	ND	20	20	23.6	22.9	118	115	64-148	3	30	
Naphthalene	ug/L	ND	20	20	21.3	21.2	107	106	57-150	0	30	
o-Xylene	ug/L	ND	20	20	23.6	22.3	118	112	68-143	6	30	
p-Isopropyltoluene	ug/L	ND	20	20	23.5	22.6	118	113	70-141	4	30	
Styrene	ug/L	ND	20	20	23.6	22.2	118	111	70-136	6	30	
Tetrachloroethene	ug/L	ND	20	20	24.2	23.1	121	115	70-139	5	30	
Toluene	ug/L	ND	20	20	23.4	22.9	117	115	47-157	2	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	24.4	24.1	122	121	70-149	1	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	23.4	23.0	117	115	70-138	2	30	
Trichloroethene	ug/L	ND	20	20	24.3	23.3	122	117	70-149	4	30	
Trichlorofluoromethane	ug/L	ND	20	20	25.8	25.1	129	125	61-154	3	30	
Vinyl acetate	ug/L	ND	40	40	45.9	45.3	115	113	48-156	1	30	
Vinyl chloride	ug/L	ND	20	20	22.9	22.0	114	110	55-172	4	30	
Xylene (Total)	ug/L	ND	60	60	71.3	67.7	119	113	66-145	5	30	
1,2-Dichloroethane-d4 (S)	%						104	100	70-130			
4-Bromofluorobenzene (S)	%						102	100	70-130			
Toluene-d8 (S)	%						101	102	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 619724 | Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D | Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976009, 92537976010, 92537976011, 92537976012, 92537976013, 92537976014, 92537976018, 92537976019, 92537976021, 92537976022, 92537976023

METHOD BLANK: 3260526 Matrix: Water
Associated Lab Samples: 92537976009, 92537976010, 92537976011, 92537976012, 92537976013, 92537976014, 92537976018, 92537976019, 92537976021, 92537976022, 92537976023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/12/21 01:35	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/12/21 01:35	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/12/21 01:35	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/12/21 01:35	
1,1-Dichloroethane	ug/L	ND	1.0	05/12/21 01:35	
1,1-Dichloroethene	ug/L	ND	1.0	05/12/21 01:35	
1,1-Dichloropropene	ug/L	ND	1.0	05/12/21 01:35	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/12/21 01:35	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/12/21 01:35	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/12/21 01:35	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	05/12/21 01:35	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/12/21 01:35	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/12/21 01:35	
1,2-Dichloroethane	ug/L	ND	1.0	05/12/21 01:35	
1,2-Dichloropropane	ug/L	ND	1.0	05/12/21 01:35	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/12/21 01:35	
1,3-Dichloropropane	ug/L	ND	1.0	05/12/21 01:35	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/12/21 01:35	
2,2-Dichloropropane	ug/L	ND	1.0	05/12/21 01:35	
2-Butanone (MEK)	ug/L	ND	5.0	05/12/21 01:35	
2-Chlorotoluene	ug/L	ND	1.0	05/12/21 01:35	
2-Hexanone	ug/L	ND	5.0	05/12/21 01:35	
4-Chlorotoluene	ug/L	ND	1.0	05/12/21 01:35	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/12/21 01:35	
Acetone	ug/L	ND	25.0	05/12/21 01:35	
Benzene	ug/L	ND	1.0	05/12/21 01:35	
Bromobenzene	ug/L	ND	1.0	05/12/21 01:35	
Bromochloromethane	ug/L	ND	1.0	05/12/21 01:35	
Bromodichloromethane	ug/L	ND	1.0	05/12/21 01:35	
Bromoform	ug/L	ND	1.0	05/12/21 01:35	
Bromomethane	ug/L	ND	2.0	05/12/21 01:35	
Carbon tetrachloride	ug/L	ND	1.0	05/12/21 01:35	
Chlorobenzene	ug/L	ND	1.0	05/12/21 01:35	
Chloroethane	ug/L	ND	1.0	05/12/21 01:35	IK
Chloroform	ug/L	ND	5.0	05/12/21 01:35	
Chloromethane	ug/L	ND	1.0	05/12/21 01:35	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/12/21 01:35	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/12/21 01:35	
Dibromochloromethane	ug/L	ND	1.0	05/12/21 01:35	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

METHOD BLANK: 3260526 Matrix: Water

Associated Lab Samples: 92537976009, 92537976010, 92537976011, 92537976012, 92537976013, 92537976014, 92537976018, 92537976019, 92537976021, 92537976022, 92537976023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/12/21 01:35	
Dichlorodifluoromethane	ug/L	ND	1.0	05/12/21 01:35	
Diisopropyl ether	ug/L	ND	1.0	05/12/21 01:35	
Ethylbenzene	ug/L	ND	1.0	05/12/21 01:35	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/12/21 01:35	v2
m&p-Xylene	ug/L	ND	2.0	05/12/21 01:35	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/12/21 01:35	
Methylene Chloride	ug/L	ND	5.0	05/12/21 01:35	
Naphthalene	ug/L	ND	1.0	05/12/21 01:35	
o-Xylene	ug/L	ND	1.0	05/12/21 01:35	
p-Isopropyltoluene	ug/L	ND	1.0	05/12/21 01:35	
Styrene	ug/L	ND	1.0	05/12/21 01:35	
Tetrachloroethene	ug/L	ND	1.0	05/12/21 01:35	
Toluene	ug/L	ND	1.0	05/12/21 01:35	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/12/21 01:35	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/12/21 01:35	
Trichloroethene	ug/L	ND	1.0	05/12/21 01:35	
Trichlorofluoromethane	ug/L	ND	1.0	05/12/21 01:35	
Vinyl acetate	ug/L	ND	2.0	05/12/21 01:35	
Vinyl chloride	ug/L	ND	1.0	05/12/21 01:35	
Xylene (Total)	ug/L	ND	1.0	05/12/21 01:35	
1,2-Dichloroethane-d4 (S)	%	109	70-130	05/12/21 01:35	
4-Bromofluorobenzene (S)	%	99	70-130	05/12/21 01:35	
Toluene-d8 (S)	%	101	70-130	05/12/21 01:35	

LABORATORY CONTROL SAMPLE: 3260527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.9	96	70-130	
1,1,1-Trichloroethane	ug/L	50	49.1	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.6	99	70-130	
1,1,2-Trichloroethane	ug/L	50	48.9	98	70-130	
1,1-Dichloroethane	ug/L	50	49.3	99	70-130	
1,1-Dichloroethene	ug/L	50	51.0	102	70-132	
1,1-Dichloropropene	ug/L	50	47.4	95	70-131	
1,2,3-Trichlorobenzene	ug/L	50	50.8	102	70-134	
1,2,3-Trichloropropane	ug/L	50	48.5	97	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.1	100	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.3	97	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	49.0	98	70-130	
1,2-Dichlorobenzene	ug/L	50	48.4	97	70-130	
1,2-Dichloroethane	ug/L	50	48.8	98	70-130	
1,2-Dichloropropane	ug/L	50	50.2	100	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

LABORATORY CONTROL SAMPLE: 3260527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	50	48.3	97	70-130	
1,3-Dichloropropane	ug/L	50	48.8	98	70-130	
1,4-Dichlorobenzene	ug/L	50	49.1	98	70-130	
2,2-Dichloropropane	ug/L	50	48.8	98	70-130	
2-Butanone (MEK)	ug/L	100	97.0	97	70-133	
2-Chlorotoluene	ug/L	50	49.7	99	70-130	
2-Hexanone	ug/L	100	103	103	70-130	
4-Chlorotoluene	ug/L	50	48.3	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	70-130	
Acetone	ug/L	100	108	108	70-144	
Benzene	ug/L	50	49.5	99	70-130	
Bromobenzene	ug/L	50	48.9	98	70-130	
Bromochloromethane	ug/L	50	51.1	102	70-130	
Bromodichloromethane	ug/L	50	49.5	99	70-130	
Bromoform	ug/L	50	47.9	96	70-131	
Bromomethane	ug/L	50	54.8	110	30-177	
Carbon tetrachloride	ug/L	50	48.6	97	70-130	
Chlorobenzene	ug/L	50	49.8	100	70-130	
Chloroethane	ug/L	50	40.0	80	46-131	IK
Chloroform	ug/L	50	52.2	104	70-130	
Chloromethane	ug/L	50	45.3	91	49-130	
cis-1,2-Dichloroethene	ug/L	50	49.6	99	70-130	
cis-1,3-Dichloropropene	ug/L	50	48.9	98	70-130	
Dibromochloromethane	ug/L	50	49.0	98	70-130	
Dibromomethane	ug/L	50	49.8	100	70-130	
Dichlorodifluoromethane	ug/L	50	43.0	86	52-134	
Diisopropyl ether	ug/L	50	49.1	98	70-131	
Ethylbenzene	ug/L	50	48.6	97	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.2	100	70-131	v2
m&p-Xylene	ug/L	100	97.8	98	70-130	
Methyl-tert-butyl ether	ug/L	50	48.4	97	70-130	
Methylene Chloride	ug/L	50	48.2	96	68-130	
Naphthalene	ug/L	50	49.0	98	70-133	
o-Xylene	ug/L	50	48.8	98	70-130	
p-Isopropyltoluene	ug/L	50	47.8	96	70-130	
Styrene	ug/L	50	49.4	99	70-130	
Tetrachloroethene	ug/L	50	47.4	95	70-130	
Toluene	ug/L	50	47.6	95	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.0	98	70-130	
trans-1,3-Dichloropropene	ug/L	50	49.2	98	70-130	
Trichloroethene	ug/L	50	48.8	98	70-130	
Trichlorofluoromethane	ug/L	50	51.3	103	61-130	
Vinyl acetate	ug/L	100	104	104	70-140	
Vinyl chloride	ug/L	50	45.0	90	59-142	
Xylene (Total)	ug/L	150	147	98	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

LABORATORY CONTROL SAMPLE: 3260527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260528 3260529

Parameter	Units	92537976022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.3	20.8	107	104	70-135	3	30	
1,1,1-Trichloroethane	ug/L	8.7	20	20	32.7	31.7	120	115	70-148	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	21.3	20.7	106	104	70-131	3	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.1	21.3	111	107	70-136	4	30	
1,1-Dichloroethane	ug/L	26.4	20	20	50.3	48.9	119	112	70-147	3	30	
1,1-Dichloroethene	ug/L	117	20	20	169	162	256	223	70-158	4	30	M1
1,1-Dichloropropene	ug/L	ND	20	20	22.6	21.7	113	108	70-149	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.1	21.0	111	105	68-140	5	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	21.1	20.3	105	101	67-137	4	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.3	20.3	106	102	70-139	5	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	20.4	19.8	102	99	69-136	3	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	21.6	20.8	108	104	70-137	4	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.5	20.9	108	104	70-133	3	30	
1,2-Dichloroethane	ug/L	1.6	20	20	23.3	22.4	108	104	67-138	4	30	
1,2-Dichloropropane	ug/L	ND	20	20	23.1	22.0	116	110	70-138	5	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	21.8	20.7	109	104	70-133	5	30	
1,3-Dichloropropane	ug/L	ND	20	20	21.5	20.8	107	104	70-136	3	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	21.6	20.9	108	104	70-133	3	30	
2,2-Dichloropropane	ug/L	ND	20	20	24.0	22.4	120	112	52-155	7	30	
2-Butanone (MEK)	ug/L	ND	40	40	40.7	39.7	102	99	61-147	2	30	
2-Chlorotoluene	ug/L	ND	20	20	22.9	21.7	115	109	70-141	5	30	
2-Hexanone	ug/L	ND	40	40	41.9	41.0	105	102	67-139	2	30	
4-Chlorotoluene	ug/L	ND	20	20	21.7	20.8	108	104	70-135	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	43.2	41.5	108	104	67-136	4	30	
Acetone	ug/L	ND	40	40	44.7	44.1	112	110	55-159	1	30	
Benzene	ug/L	ND	20	20	22.5	21.3	112	106	67-150	6	30	
Bromobenzene	ug/L	ND	20	20	22.1	21.3	110	107	70-134	4	30	
Bromochloromethane	ug/L	ND	20	20	22.2	21.1	111	105	70-146	5	30	
Bromodichloromethane	ug/L	ND	20	20	21.9	21.1	110	105	70-138	4	30	
Bromoform	ug/L	ND	20	20	20.6	19.2	103	96	57-138	7	30	
Bromomethane	ug/L	ND	20	20	30.1	27.9	150	139	10-200	8	30	
Carbon tetrachloride	ug/L	ND	20	20	23.4	22.6	117	113	70-147	3	30	
Chlorobenzene	ug/L	ND	20	20	22.1	21.2	111	106	70-137	4	30	
Chloroethane	ug/L	ND	20	20	23.6	22.2	118	111	51-166	7	30	IK
Chloroform	ug/L	ND	20	20	23.5	22.9	116	113	70-144	3	30	
Chloromethane	ug/L	ND	20	20	21.1	19.5	105	98	24-161	8	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.8	21.5	114	108	67-148	6	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	21.7	20.8	108	104	70-142	4	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260528 3260529

Parameter	Units	92537976022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromochloromethane	ug/L	ND	20	20	21.3	20.4	106	102	68-138	4	30	
Dibromomethane	ug/L	ND	20	20	21.9	21.3	110	107	70-134	3	30	
Dichlorodifluoromethane	ug/L	ND	20	20	21.6	20.4	108	102	43-155	6	30	
Diisopropyl ether	ug/L	ND	20	20	21.1	20.3	106	101	65-146	4	30	
Ethylbenzene	ug/L	ND	20	20	22.0	21.4	110	107	68-143	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.0	21.6	115	108	62-151	6	30	
m&p-Xylene	ug/L	ND	40	40	44.1	43.0	110	107	53-157	3	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	21.4	20.5	103	98	59-156	4	30	
Methylene Chloride	ug/L	ND	20	20	22.3	21.1	112	106	64-148	5	30	
Naphthalene	ug/L	ND	20	20	20.6	19.7	103	99	57-150	5	30	
o-Xylene	ug/L	ND	20	20	21.4	21.1	107	106	68-143	1	30	
p-Isopropyltoluene	ug/L	ND	20	20	21.6	21.0	108	105	70-141	3	30	
Styrene	ug/L	ND	20	20	22.0	21.1	110	105	70-136	4	30	
Tetrachloroethene	ug/L	ND	20	20	22.1	21.3	111	106	70-139	4	30	
Toluene	ug/L	ND	20	20	21.9	21.2	110	106	47-157	3	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.9	21.5	114	108	70-149	6	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.6	21.0	108	105	70-138	3	30	
Trichloroethene	ug/L	ND	20	20	23.3	22.3	114	109	70-149	4	30	
Trichlorofluoromethane	ug/L	ND	20	20	23.7	22.5	118	113	61-154	5	30	
Vinyl acetate	ug/L	ND	40	40	43.7	41.7	109	104	48-156	5	30	
Vinyl chloride	ug/L	ND	20	20	21.9	20.8	110	104	55-172	5	30	
Xylene (Total)	ug/L	ND	60	60	65.5	64.1	109	107	66-145	2	30	
1,2-Dichloroethane-d4 (S)	%						100	103	70-130			
4-Bromofluorobenzene (S)	%						101	102	70-130			
Toluene-d8 (S)	%						101	100	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 620213
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976015, 92537976016, 92537976020

METHOD BLANK: 3263117 Matrix: Water
Associated Lab Samples: 92537976015, 92537976016, 92537976020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1-Dichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1-Dichloroethene	ug/L	ND	1.0	05/13/21 12:16	
1,1-Dichloropropene	ug/L	ND	1.0	05/13/21 12:16	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/13/21 12:16	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	05/13/21 12:16	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichloropropane	ug/L	ND	1.0	05/13/21 12:16	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,3-Dichloropropane	ug/L	ND	1.0	05/13/21 12:16	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
2,2-Dichloropropane	ug/L	ND	1.0	05/13/21 12:16	
2-Butanone (MEK)	ug/L	ND	5.0	05/13/21 12:16	
2-Chlorotoluene	ug/L	ND	1.0	05/13/21 12:16	
2-Hexanone	ug/L	ND	5.0	05/13/21 12:16	
4-Chlorotoluene	ug/L	ND	1.0	05/13/21 12:16	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/13/21 12:16	
Acetone	ug/L	ND	25.0	05/13/21 12:16	v1
Benzene	ug/L	ND	1.0	05/13/21 12:16	
Bromobenzene	ug/L	ND	1.0	05/13/21 12:16	
Bromochloromethane	ug/L	ND	1.0	05/13/21 12:16	
Bromodichloromethane	ug/L	ND	1.0	05/13/21 12:16	
Bromoform	ug/L	ND	1.0	05/13/21 12:16	
Bromomethane	ug/L	ND	2.0	05/13/21 12:16	IK
Carbon tetrachloride	ug/L	ND	1.0	05/13/21 12:16	
Chlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
Chloroethane	ug/L	ND	1.0	05/13/21 12:16	
Chloroform	ug/L	ND	5.0	05/13/21 12:16	
Chloromethane	ug/L	ND	1.0	05/13/21 12:16	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/13/21 12:16	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/13/21 12:16	
Dibromochloromethane	ug/L	ND	1.0	05/13/21 12:16	
Dibromomethane	ug/L	ND	1.0	05/13/21 12:16	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

METHOD BLANK: 3263117 Matrix: Water
Associated Lab Samples: 92537976015, 92537976016, 92537976020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/13/21 12:16	
Diisopropyl ether	ug/L	ND	1.0	05/13/21 12:16	
Ethylbenzene	ug/L	ND	1.0	05/13/21 12:16	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/13/21 12:16	
m&p-Xylene	ug/L	ND	2.0	05/13/21 12:16	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/13/21 12:16	
Methylene Chloride	ug/L	ND	5.0	05/13/21 12:16	
Naphthalene	ug/L	ND	1.0	05/13/21 12:16	
o-Xylene	ug/L	ND	1.0	05/13/21 12:16	
p-Isopropyltoluene	ug/L	ND	1.0	05/13/21 12:16	
Styrene	ug/L	ND	1.0	05/13/21 12:16	
Tetrachloroethene	ug/L	ND	1.0	05/13/21 12:16	
Toluene	ug/L	ND	1.0	05/13/21 12:16	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/13/21 12:16	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/13/21 12:16	
Trichloroethene	ug/L	ND	1.0	05/13/21 12:16	
Trichlorofluoromethane	ug/L	ND	1.0	05/13/21 12:16	
Vinyl acetate	ug/L	ND	2.0	05/13/21 12:16	
Vinyl chloride	ug/L	ND	1.0	05/13/21 12:16	
Xylene (Total)	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichloroethane-d4 (S)	%	97	70-130	05/13/21 12:16	
4-Bromofluorobenzene (S)	%	98	70-130	05/13/21 12:16	
Toluene-d8 (S)	%	99	70-130	05/13/21 12:16	

LABORATORY CONTROL SAMPLE: 3263118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.4	107	70-130	
1,1,1-Trichloroethane	ug/L	50	49.1	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	70-130	
1,1,2-Trichloroethane	ug/L	50	51.0	102	70-130	
1,1-Dichloroethane	ug/L	50	54.2	108	70-130	
1,1-Dichloroethene	ug/L	50	49.5	99	70-132	
1,1-Dichloropropene	ug/L	50	50.7	101	70-131	
1,2,3-Trichlorobenzene	ug/L	50	54.9	110	70-134	
1,2,3-Trichloropropane	ug/L	50	55.1	110	70-130	
1,2,4-Trichlorobenzene	ug/L	50	53.1	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	58.5	117	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	53.5	107	70-130	
1,2-Dichlorobenzene	ug/L	50	49.6	99	70-130	
1,2-Dichloroethane	ug/L	50	50.0	100	70-130	
1,2-Dichloropropane	ug/L	50	54.1	108	70-130	
1,3-Dichlorobenzene	ug/L	50	50.4	101	70-130	
1,3-Dichloropropane	ug/L	50	53.3	107	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

LABORATORY CONTROL SAMPLE: 3263118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	50.0	100	70-130	
2,2-Dichloropropane	ug/L	50	51.3	103	70-130	
2-Butanone (MEK)	ug/L	100	117	117	70-133	
2-Chlorotoluene	ug/L	50	50.9	102	70-130	
2-Hexanone	ug/L	100	117	117	70-130	
4-Chlorotoluene	ug/L	50	50.3	101	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	70-130	
Acetone	ug/L	100	128	128	70-144	v1
Benzene	ug/L	50	53.2	106	70-130	
Bromobenzene	ug/L	50	50.3	101	70-130	
Bromochloromethane	ug/L	50	53.6	107	70-130	
Bromodichloromethane	ug/L	50	51.6	103	70-130	
Bromoform	ug/L	50	54.8	110	70-131	
Bromomethane	ug/L	50	36.7	73	30-177	IK
Carbon tetrachloride	ug/L	50	50.5	101	70-130	
Chlorobenzene	ug/L	50	52.6	105	70-130	
Chloroethane	ug/L	50	50.9	102	46-131	
Chloroform	ug/L	50	52.7	105	70-130	
Chloromethane	ug/L	50	52.9	106	49-130	
cis-1,2-Dichloroethene	ug/L	50	52.3	105	70-130	
cis-1,3-Dichloropropene	ug/L	50	52.4	105	70-130	
Dibromochloromethane	ug/L	50	55.1	110	70-130	
Dibromomethane	ug/L	50	53.3	107	70-130	
Dichlorodifluoromethane	ug/L	50	37.4	75	52-134	
Diisopropyl ether	ug/L	50	53.8	108	70-131	
Ethylbenzene	ug/L	50	51.9	104	70-130	
Hexachloro-1,3-butadiene	ug/L	50	54.1	108	70-131	
m&p-Xylene	ug/L	100	104	104	70-130	
Methyl-tert-butyl ether	ug/L	50	53.6	107	70-130	
Methylene Chloride	ug/L	50	46.9	94	68-130	
Naphthalene	ug/L	50	56.3	113	70-133	
o-Xylene	ug/L	50	52.2	104	70-130	
p-Isopropyltoluene	ug/L	50	50.5	101	70-130	
Styrene	ug/L	50	53.4	107	70-130	
Tetrachloroethene	ug/L	50	49.9	100	70-130	
Toluene	ug/L	50	49.0	98	70-130	
trans-1,2-Dichloroethene	ug/L	50	55.8	112	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.2	102	70-130	
Trichloroethene	ug/L	50	51.4	103	70-130	
Trichlorofluoromethane	ug/L	50	41.7	83	61-130	
Vinyl acetate	ug/L	100	122	122	70-140	
Vinyl chloride	ug/L	50	47.5	95	59-142	
Xylene (Total)	ug/L	150	156	104	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			95	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3263119 3263120

Parameter	Units	92537746001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	400	400	582	433	146	108	70-135	29	30	M1
1,1,1-Trichloroethane	ug/L	ND	400	400	589	438	147	110	70-148	29	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	400	400	618	453	154	113	70-131	31	30	M1,R1
1,1,2-Trichloroethane	ug/L	ND	400	400	581	426	145	106	70-136	31	30	M1,R1
1,1-Dichloroethane	ug/L	ND	400	400	640	472	160	118	70-147	30	30	M1
1,1-Dichloroethene	ug/L	ND	400	400	604	444	151	111	70-158	30	30	
1,1-Dichloropropene	ug/L	ND	400	400	620	454	155	113	70-149	31	30	M1,R1
1,2,3-Trichlorobenzene	ug/L	ND	400	400	575	444	144	111	68-140	26	30	M1
1,2,3-Trichloropropane	ug/L	ND	400	400	ND	ND	0	0	67-137		30	M1
1,2,4-Trichlorobenzene	ug/L	ND	400	400	552	431	138	108	70-139	25	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	400	400	608	460	152	115	69-136	28	30	M1
1,2-Dibromoethane (EDB)	ug/L	ND	400	400	590	440	148	110	70-137	29	30	M1
1,2-Dichlorobenzene	ug/L	ND	400	400	540	414	135	104	70-133	26	30	M1
1,2-Dichloroethane	ug/L	ND	400	400	556	413	139	103	67-138	30	30	M1
1,2-Dichloropropane	ug/L	ND	400	400	646	483	161	121	70-138	29	30	M1
1,3-Dichlorobenzene	ug/L	ND	400	400	546	424	137	106	70-133	25	30	M1
1,3-Dichloropropane	ug/L	ND	400	400	605	449	151	112	70-136	30	30	M1
1,4-Dichlorobenzene	ug/L	ND	400	400	542	417	136	104	70-133	26	30	M1
2,2-Dichloropropane	ug/L	ND	400	400	548	410	137	102	52-155	29	30	
2-Butanone (MEK)	ug/L	ND	800	800	1290	927	161	116	61-147	33	30	M1,R1
2-Chlorotoluene	ug/L	ND	400	400	951	617	238	154	70-141	43	30	M1,R1
2-Hexanone	ug/L	ND	800	800	1240	884	154	111	67-139	33	30	M1,R1
4-Chlorotoluene	ug/L	ND	400	400	549	421	137	105	70-135	26	30	M1
4-Methyl-2-pentanone (MIBK)	ug/L	ND	800	800	1170	842	147	105	67-136	33	30	M1,R1
Acetone	ug/L	ND	800	800	1350	994	169	124	55-159	31	30	M1,R1, v1
Benzene	ug/L	3180	400	400	4040	3720	215	135	67-150	8	30	E,M1
Bromobenzene	ug/L	ND	400	400	548	425	137	106	70-134	25	30	M1
Bromochloromethane	ug/L	ND	400	400	625	470	156	118	70-146	28	30	M1
Bromodichloromethane	ug/L	ND	400	400	580	436	145	109	70-138	28	30	M1
Bromoform	ug/L	ND	400	400	555	415	139	104	57-138	29	30	M1
Bromomethane	ug/L	ND	400	400	591	411	148	103	10-200	36	30	IK,R1
Carbon tetrachloride	ug/L	ND	400	400	594	451	149	113	70-147	27	30	M1
Chlorobenzene	ug/L	ND	400	400	593	445	148	111	70-137	29	30	M1
Chloroethane	ug/L	ND	400	400	692	640	173	160	51-166	8	30	M1
Chloroform	ug/L	ND	400	400	636	468	158	116	70-144	30	30	M1
Chloromethane	ug/L	ND	400	400	612	437	153	109	24-161	33	30	R1
cis-1,2-Dichloroethene	ug/L	ND	400	400	618	461	155	115	67-148	29	30	M1
cis-1,3-Dichloropropene	ug/L	ND	400	400	559	418	140	105	70-142	29	30	
Dibromochloromethane	ug/L	ND	400	400	599	438	150	110	68-138	31	30	M1,R1
Dibromomethane	ug/L	ND	400	400	596	443	149	111	70-134	30	30	M1
Dichlorodifluoromethane	ug/L	ND	400	400	478	357	119	89	43-155	29	30	
Diisopropyl ether	ug/L	26.1	400	400	638	478	153	113	65-146	29	30	M1
Ethylbenzene	ug/L	1680	400	400	2360	2170	169	124	68-143	8	30	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3263119 3263120

Parameter	Units	92537746001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Hexachloro-1,3-butadiene	ug/L	ND	400	400	570	442	142	110	62-151	25	30	
m&p-Xylene	ug/L	5900	800	800	7320	6870	177	121	53-157	6	30	M1
Methyl-tert-butyl ether	ug/L	524	400	400	1180	994	165	117	59-156	17	30	M1
Methylene Chloride	ug/L	ND	400	400	499	331	125	83	64-148	41	30	R1
Naphthalene	ug/L	758	400	400	1420	1260	166	126	57-150	12	30	M1
o-Xylene	ug/L	3320	400	400	4070	3830	188	127	68-143	6	30	E,M1
p-Isopropyltoluene	ug/L	ND	400	400	587	456	147	114	70-141	25	30	M1
Styrene	ug/L	ND	400	400	696	547	174	137	70-136	24	30	M1
Tetrachloroethene	ug/L	ND	400	400	563	420	141	105	70-139	29	30	M1
Toluene	ug/L	685	400	400	1310	1130	156	111	47-157	15	30	
trans-1,2-Dichloroethene	ug/L	ND	400	400	638	479	159	120	70-149	28	30	M1
trans-1,3-Dichloropropene	ug/L	ND	400	400	547	401	137	100	70-138	31	30	R1
Trichloroethene	ug/L	ND	400	400	608	450	152	112	70-149	30	30	M1
Trichlorofluoromethane	ug/L	ND	400	400	532	393	133	98	61-154	30	30	
Vinyl acetate	ug/L	ND	800	800	1310	960	164	120	48-156	31	30	M1,R1
Vinyl chloride	ug/L	ND	400	400	620	462	155	115	55-172	29	30	
Xylene (Total)	ug/L	9230	1200	1200	11400	10700	180	123	66-145	6	30	ES,MS
1,2-Dichloroethane-d4 (S)	%						89	94	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						96	95	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 620626
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976017

METHOD BLANK: 3265483 Matrix: Water
Associated Lab Samples: 92537976017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/14/21 17:20	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/14/21 17:20	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/14/21 17:20	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/14/21 17:20	
1,1-Dichloroethane	ug/L	ND	1.0	05/14/21 17:20	
1,1-Dichloroethene	ug/L	ND	1.0	05/14/21 17:20	
1,1-Dichloropropene	ug/L	ND	1.0	05/14/21 17:20	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/14/21 17:20	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/14/21 17:20	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/14/21 17:20	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	05/14/21 17:20	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/14/21 17:20	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/14/21 17:20	
1,2-Dichloroethane	ug/L	ND	1.0	05/14/21 17:20	
1,2-Dichloropropane	ug/L	ND	1.0	05/14/21 17:20	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/14/21 17:20	
1,3-Dichloropropane	ug/L	ND	1.0	05/14/21 17:20	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/14/21 17:20	
2,2-Dichloropropane	ug/L	ND	1.0	05/14/21 17:20	
2-Butanone (MEK)	ug/L	ND	5.0	05/14/21 17:20	
2-Chlorotoluene	ug/L	ND	1.0	05/14/21 17:20	
2-Hexanone	ug/L	ND	5.0	05/14/21 17:20	
4-Chlorotoluene	ug/L	ND	1.0	05/14/21 17:20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/14/21 17:20	
Acetone	ug/L	ND	25.0	05/14/21 17:20	
Benzene	ug/L	ND	1.0	05/14/21 17:20	
Bromobenzene	ug/L	ND	1.0	05/14/21 17:20	
Bromochloromethane	ug/L	ND	1.0	05/14/21 17:20	IK
Bromodichloromethane	ug/L	ND	1.0	05/14/21 17:20	
Bromoform	ug/L	ND	1.0	05/14/21 17:20	
Bromomethane	ug/L	ND	2.0	05/14/21 17:20	IH,v1
Carbon tetrachloride	ug/L	ND	1.0	05/14/21 17:20	
Chlorobenzene	ug/L	ND	1.0	05/14/21 17:20	
Chloroethane	ug/L	ND	1.0	05/14/21 17:20	
Chloroform	ug/L	ND	5.0	05/14/21 17:20	
Chloromethane	ug/L	ND	1.0	05/14/21 17:20	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/14/21 17:20	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/14/21 17:20	
Dibromochloromethane	ug/L	ND	1.0	05/14/21 17:20	
Dibromomethane	ug/L	ND	1.0	05/14/21 17:20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

METHOD BLANK: 3265483 Matrix: Water
Associated Lab Samples: 92537976017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/14/21 17:20	
Diisopropyl ether	ug/L	ND	1.0	05/14/21 17:20	
Ethylbenzene	ug/L	ND	1.0	05/14/21 17:20	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/14/21 17:20	
m&p-Xylene	ug/L	ND	2.0	05/14/21 17:20	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/14/21 17:20	
Methylene Chloride	ug/L	ND	5.0	05/14/21 17:20	
Naphthalene	ug/L	ND	1.0	05/14/21 17:20	
o-Xylene	ug/L	ND	1.0	05/14/21 17:20	
p-Isopropyltoluene	ug/L	ND	1.0	05/14/21 17:20	
Styrene	ug/L	ND	1.0	05/14/21 17:20	
Tetrachloroethene	ug/L	ND	1.0	05/14/21 17:20	
Toluene	ug/L	ND	1.0	05/14/21 17:20	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/14/21 17:20	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/14/21 17:20	
Trichloroethene	ug/L	ND	1.0	05/14/21 17:20	
Trichlorofluoromethane	ug/L	ND	1.0	05/14/21 17:20	
Vinyl acetate	ug/L	ND	2.0	05/14/21 17:20	
Vinyl chloride	ug/L	ND	1.0	05/14/21 17:20	
Xylene (Total)	ug/L	ND	1.0	05/14/21 17:20	
1,2-Dichloroethane-d4 (S)	%	83	70-130	05/14/21 17:20	
4-Bromofluorobenzene (S)	%	104	70-130	05/14/21 17:20	
Toluene-d8 (S)	%	108	70-130	05/14/21 17:20	

LABORATORY CONTROL SAMPLE: 3265484

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	55.5	111	70-130	
1,1,1-Trichloroethane	ug/L	50	48.1	96	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.4	101	70-130	
1,1,2-Trichloroethane	ug/L	50	56.1	112	70-130	
1,1-Dichloroethane	ug/L	50	47.4	95	70-130	
1,1-Dichloroethene	ug/L	50	45.5	91	70-132	
1,1-Dichloropropene	ug/L	50	51.2	102	70-131	
1,2,3-Trichlorobenzene	ug/L	50	53.1	106	70-134	
1,2,3-Trichloropropane	ug/L	50	47.4	95	70-130	
1,2,4-Trichlorobenzene	ug/L	50	52.8	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	53.1	106	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	56.0	112	70-130	
1,2-Dichlorobenzene	ug/L	50	51.4	103	70-130	
1,2-Dichloroethane	ug/L	50	45.9	92	70-130	
1,2-Dichloropropane	ug/L	50	52.5	105	70-130	
1,3-Dichlorobenzene	ug/L	50	51.6	103	70-130	
1,3-Dichloropropane	ug/L	50	54.1	108	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

LABORATORY CONTROL SAMPLE: 3265484

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	52.6	105	70-130	
2,2-Dichloropropane	ug/L	50	48.3	97	70-130	
2-Butanone (MEK)	ug/L	100	101	101	70-133	
2-Chlorotoluene	ug/L	50	52.8	106	70-130	
2-Hexanone	ug/L	100	89.0	89	70-130	
4-Chlorotoluene	ug/L	50	50.8	102	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.7	94	70-130	
Acetone	ug/L	100	93.3	93	70-144	
Benzene	ug/L	50	51.3	103	70-130	
Bromobenzene	ug/L	50	53.9	108	70-130	
Bromochloromethane	ug/L	50	50.4	101	70-130	IK
Bromodichloromethane	ug/L	50	51.3	103	70-130	
Bromoform	ug/L	50	56.8	114	70-131	
Bromomethane	ug/L	50	67.5	135	30-177	IH,v1
Carbon tetrachloride	ug/L	50	50.4	101	70-130	
Chlorobenzene	ug/L	50	51.0	102	70-130	
Chloroethane	ug/L	50	45.8	92	46-131	
Chloroform	ug/L	50	49.2	98	70-130	
Chloromethane	ug/L	50	47.4	95	49-130	
cis-1,2-Dichloroethene	ug/L	50	46.3	93	70-130	
cis-1,3-Dichloropropene	ug/L	50	54.2	108	70-130	
Dibromochloromethane	ug/L	50	56.7	113	70-130	
Dibromomethane	ug/L	50	53.2	106	70-130	
Dichlorodifluoromethane	ug/L	50	41.4	83	52-134	
Diisopropyl ether	ug/L	50	45.9	92	70-131	
Ethylbenzene	ug/L	50	50.5	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	54.6	109	70-131	
m&p-Xylene	ug/L	100	99.7	100	70-130	
Methyl-tert-butyl ether	ug/L	50	51.2	102	70-130	
Methylene Chloride	ug/L	50	45.0	90	68-130	
Naphthalene	ug/L	50	49.5	99	70-133	
o-Xylene	ug/L	50	50.2	100	70-130	
p-Isopropyltoluene	ug/L	50	48.6	97	70-130	
Styrene	ug/L	50	51.0	102	70-130	
Tetrachloroethene	ug/L	50	51.3	103	70-130	
Toluene	ug/L	50	49.2	98	70-130	
trans-1,2-Dichloroethene	ug/L	50	46.4	93	70-130	
trans-1,3-Dichloropropene	ug/L	50	52.8	106	70-130	
Trichloroethene	ug/L	50	56.5	113	70-130	
Trichlorofluoromethane	ug/L	50	45.9	92	61-130	
Vinyl acetate	ug/L	100	119	119	70-140	
Vinyl chloride	ug/L	50	44.8	90	59-142	
Xylene (Total)	ug/L	150	150	100	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
4-Bromofluorobenzene (S)	%			96	70-130	
Toluene-d8 (S)	%			96	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3265485 3265486

Parameter	Units	92538877004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	100	100	113	123	113	123	70-135	9	30	
1,1,1-Trichloroethane	ug/L	ND	100	100	111	115	111	115	70-148	4	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	100	100	104	116	104	116	70-131	11	30	
1,1,2-Trichloroethane	ug/L	ND	100	100	123	130	123	130	70-136	5	30	
1,1-Dichloroethane	ug/L	ND	100	100	109	112	109	112	70-147	3	30	
1,1-Dichloroethene	ug/L	ND	100	100	108	114	108	114	70-158	5	30	
1,1-Dichloropropene	ug/L	ND	100	100	114	122	114	122	70-149	7	30	
1,2,3-Trichlorobenzene	ug/L	ND	100	100	110	119	110	119	68-140	8	30	
1,2,3-Trichloropropane	ug/L	ND	100	100	100	114	100	114	67-137	12	30	
1,2,4-Trichlorobenzene	ug/L	ND	100	100	108	117	108	117	70-139	8	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	105	116	105	116	69-136	10	30	
1,2-Dibromoethane (EDB)	ug/L	ND	100	100	111	123	111	123	70-137	10	30	
1,2-Dichlorobenzene	ug/L	ND	100	100	109	115	109	115	70-133	5	30	
1,2-Dichloroethane	ug/L	ND	100	100	104	109	104	109	67-138	5	30	
1,2-Dichloropropane	ug/L	ND	100	100	118	125	118	125	70-138	6	30	
1,3-Dichlorobenzene	ug/L	ND	100	100	109	117	109	117	70-133	7	30	
1,3-Dichloropropane	ug/L	ND	100	100	110	118	110	118	70-136	6	30	
1,4-Dichlorobenzene	ug/L	ND	100	100	111	116	111	116	70-133	4	30	
2,2-Dichloropropane	ug/L	ND	100	100	109	113	109	113	52-155	4	30	
2-Butanone (MEK)	ug/L	ND	200	200	207	228	103	114	61-147	10	30	
2-Chlorotoluene	ug/L	ND	100	100	114	118	114	118	70-141	4	30	
2-Hexanone	ug/L	ND	200	200	186	205	93	103	67-139	10	30	
4-Chlorotoluene	ug/L	ND	100	100	109	114	109	114	70-135	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	204	229	102	114	67-136	11	30	
Acetone	ug/L	ND	200	200	180	234	90	117	55-159	26	30	
Benzene	ug/L	193	100	100	316	318	123	125	67-150	1	30	
Bromobenzene	ug/L	ND	100	100	117	124	117	124	70-134	6	30	
Bromochloromethane	ug/L	ND	100	100	114	115	114	115	70-146	0	30	IK
Bromodichloromethane	ug/L	ND	100	100	115	120	115	120	70-138	4	30	
Bromoform	ug/L	ND	100	100	112	126	112	126	57-138	11	30	
Bromomethane	ug/L	ND	100	100	185	181	185	181	10-200	2	30	IH,v1
Carbon tetrachloride	ug/L	ND	100	100	121	124	121	124	70-147	2	30	
Chlorobenzene	ug/L	ND	100	100	112	118	112	118	70-137	5	30	
Chloroethane	ug/L	ND	100	100	119	123	119	123	51-166	3	30	
Chloroform	ug/L	ND	100	100	110	117	110	117	70-144	6	30	
Chloromethane	ug/L	ND	100	100	106	108	106	108	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	ND	100	100	105	109	105	109	67-148	3	30	
cis-1,3-Dichloropropene	ug/L	ND	100	100	117	123	117	123	70-142	5	30	
Dibromochloromethane	ug/L	ND	100	100	115	126	115	126	68-138	9	30	
Dibromomethane	ug/L	ND	100	100	119	121	119	121	70-134	2	30	
Dichlorodifluoromethane	ug/L	ND	100	100	100	104	100	104	43-155	4	30	
Diisopropyl ether	ug/L	ND	100	100	100	105	97	102	65-146	5	30	
Ethylbenzene	ug/L	18.4	100	100	127	135	109	117	68-143	6	30	
Hexachloro-1,3-butadiene	ug/L	ND	100	100	116	121	116	121	62-151	4	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3265485 3265486

Parameter	Units	92538877004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	39.8	200	200	258	270	109	115	53-157	5	30	
Methyl-tert-butyl ether	ug/L	ND	100	100	107	116	107	116	59-156	8	30	
Methylene Chloride	ug/L	ND	100	100	105	107	105	107	64-148	2	30	
Naphthalene	ug/L	975	100	100	1050	1110	79	133	57-150	5	30	E
o-Xylene	ug/L	20.2	100	100	128	134	108	114	68-143	4	30	
p-Isopropyltoluene	ug/L	ND	100	100	104	108	102	106	70-141	4	30	
Styrene	ug/L	ND	100	100	112	119	111	118	70-136	6	30	
Tetrachloroethene	ug/L	ND	100	100	108	113	108	113	70-139	5	30	
Toluene	ug/L	30.6	100	100	142	147	111	117	47-157	3	30	
trans-1,2-Dichloroethene	ug/L	ND	100	100	106	108	106	108	70-149	1	30	
trans-1,3-Dichloropropene	ug/L	ND	100	100	112	118	112	118	70-138	6	30	
Trichloroethene	ug/L	ND	100	100	125	129	125	129	70-149	3	30	
Trichlorofluoromethane	ug/L	ND	100	100	116	119	116	119	61-154	3	30	
Vinyl acetate	ug/L	ND	200	200	236	256	118	128	48-156	8	30	
Vinyl chloride	ug/L	ND	100	100	106	109	106	109	55-172	3	30	
Xylene (Total)	ug/L	60.0	300	300	386	404	109	115	66-145	5	30	
1,2-Dichloroethane-d4 (S)	%						91	90	70-130			
4-Bromofluorobenzene (S)	%						98	98	70-130			
Toluene-d8 (S)	%						99	99	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 619692
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976001, 92537976002, 92537976003, 92537976004

METHOD BLANK: 3260240 Matrix: Water
Associated Lab Samples: 92537976001, 92537976002, 92537976003, 92537976004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/11/21 14:55	
1,2-Dichloroethane-d4 (S)	%	109	70-130	05/11/21 14:55	
Toluene-d8 (S)	%	97	66-133	05/11/21 14:55	

LABORATORY CONTROL SAMPLE: 3260241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.0	90	70-130	
1,2-Dichloroethane-d4 (S)	%			110	70-130	
Toluene-d8 (S)	%			99	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260242 3260243

Parameter	Units	92537966017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	299	100	100	394	369	95	70	64-141	7	30	
1,2-Dichloroethane-d4 (S)	%						109	108	70-130		30	
Toluene-d8 (S)	%						92	93	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 619694
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976005, 92537976006, 92537976007, 92537976008, 92537976009, 92537976010, 92537976011, 92537976012, 92537976013, 92537976014, 92537976018, 92537976019, 92537976020

METHOD BLANK: 3260254 Matrix: Water
Associated Lab Samples: 92537976005, 92537976006, 92537976007, 92537976008, 92537976009, 92537976010, 92537976011, 92537976012, 92537976013, 92537976014, 92537976018, 92537976019, 92537976020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/12/21 03:09	
1,2-Dichloroethane-d4 (S)	%	88	70-130	05/12/21 03:09	
Toluene-d8 (S)	%	108	66-133	05/12/21 03:09	

LABORATORY CONTROL SAMPLE: 3260255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.6	103	70-130	
1,2-Dichloroethane-d4 (S)	%			88	70-130	
Toluene-d8 (S)	%			108	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260256 3260257

Parameter	Units	92537976018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	23.6	20	20	39.3	42.4	78	94	64-141	7	30	
1,2-Dichloroethane-d4 (S)	%						107	106	70-130		30	
Toluene-d8 (S)	%						92	92	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 619760
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976023

METHOD BLANK: 3260753 Matrix: Water
Associated Lab Samples: 92537976023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/12/21 02:50	
1,2-Dichloroethane-d4 (S)	%	88	70-130	05/12/21 02:50	
Toluene-d8 (S)	%	107	66-133	05/12/21 02:50	

LABORATORY CONTROL SAMPLE: 3260754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.6	103	70-130	
1,2-Dichloroethane-d4 (S)	%			86	70-130	
Toluene-d8 (S)	%			108	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3261862 3261863

Parameter	Units	92537854012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	3.2	20	20	24.9	23.6	109	102	64-141	5	30	
1,2-Dichloroethane-d4 (S)	%						110	108	70-130		30	
Toluene-d8 (S)	%						92	91	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

QC Batch: 619924
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537976015, 92537976016, 92537976017, 92537976021, 92537976022

METHOD BLANK: 3261494 Matrix: Water
Associated Lab Samples: 92537976015, 92537976016, 92537976017, 92537976021, 92537976022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/12/21 13:11	
1,2-Dichloroethane-d4 (S)	%	106	70-130	05/12/21 13:11	
Toluene-d8 (S)	%	92	66-133	05/12/21 13:11	

LABORATORY CONTROL SAMPLE: 3261495

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.0	100	70-130	
1,2-Dichloroethane-d4 (S)	%			105	70-130	
Toluene-d8 (S)	%			93	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3261496 3261497

Parameter	Units	92537963001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	291	100	100	398	381	107	90	64-141	4	30	
1,2-Dichloroethane-d4 (S)	%						108	106	70-130		30	
Toluene-d8 (S)	%						91	92	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALIFIERS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
ES	The reported result is estimated because one or more of the constituent results are qualified as such.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MS	Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.
R1	RPD value was outside control limits.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92537976001	**MW-27D**	EPA 8260D	619721		
92537976002	**MW-3**	EPA 8260D	619721		
92537976003	**MW-43**	EPA 8260D	619721		
92537976004	**MW-39**	EPA 8260D	619721		
92537976005	**MW-42**	EPA 8260D	619721		
92537976006	**MW-18**	EPA 8260D	619721		
92537976007	**MW-40D**	EPA 8260D	619721		
92537976008	**MW-38R**	EPA 8260D	619721		
92537976009	**MW-44**	EPA 8260D	619724		
92537976010	**MW-21D**	EPA 8260D	619724		
92537976011	**MW-41D**	EPA 8260D	619724		
92537976012	**MW-1D**	EPA 8260D	619724		
92537976013	**MW-1**	EPA 8260D	619724		
92537976014	**MW-22D**	EPA 8260D	619724		
92537976015	**MW-20**	EPA 8260D	620213		
92537976016	**DUP-20210509A**	EPA 8260D	620213		
92537976017	**MW-4**	EPA 8260D	620626		
92537976018	**MW-9**	EPA 8260D	619724		
92537976019	**MW-23D**	EPA 8260D	619724		
92537976020	**MW-16**	EPA 8260D	620213		
92537976021	**MW-16D**	EPA 8260D	619724		
92537976022	**DUP-20210509B**	EPA 8260D	619724		
92537976023	**TRIP BLANK A**	EPA 8260D	619724		
92537976001	**MW-27D**	EPA 8260D Mod.	619692		
92537976002	**MW-3**	EPA 8260D Mod.	619692		
92537976003	**MW-43**	EPA 8260D Mod.	619692		
92537976004	**MW-39**	EPA 8260D Mod.	619692		
92537976005	**MW-42**	EPA 8260D Mod.	619694		
92537976006	**MW-18**	EPA 8260D Mod.	619694		
92537976007	**MW-40D**	EPA 8260D Mod.	619694		
92537976008	**MW-38R**	EPA 8260D Mod.	619694		
92537976009	**MW-44**	EPA 8260D Mod.	619694		
92537976010	**MW-21D**	EPA 8260D Mod.	619694		
92537976011	**MW-41D**	EPA 8260D Mod.	619694		
92537976012	**MW-1D**	EPA 8260D Mod.	619694		
92537976013	**MW-1**	EPA 8260D Mod.	619694		
92537976014	**MW-22D**	EPA 8260D Mod.	619694		
92537976015	**MW-20**	EPA 8260D Mod.	619924		
92537976016	**DUP-20210509A**	EPA 8260D Mod.	619924		
92537976017	**MW-4**	EPA 8260D Mod.	619924		
92537976018	**MW-9**	EPA 8260D Mod.	619694		
92537976019	**MW-23D**	EPA 8260D Mod.	619694		
92537976020	**MW-16**	EPA 8260D Mod.	619694		

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537976

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92537976021	**MW-16D**	EPA 8260D Mod.	619924		
92537976022	**DUP-20210509B**	EPA 8260D Mod.	619924		
92537976023	**TRIP BLANK A**	EPA 8260D Mod.	619760		

Pace Analytical®	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☒ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: WSP VA

Project

WO# : 92537976

92537976

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Date/Initials Person Examining Contents: 5-11-21 LL

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Thermometer: ☒ IR Gun ID: 92T064

Type of Ice: ☒ Wet ☐ Blue ☐ None

Cooler Temp: 3.3, 2.1, 4.1 (1.8) Correction Factor: Add/Subtract (°C) 0.0°C

Cooler Temp Corrected (°C): 3.3, 2.1, 4.1 (1.8)

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

				Comments/Discrepancy:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☒ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	4.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☒ N/A	8.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☒ No	☐ N/A	10.
Trip Blank Present?	☒ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	

Field Data Required? ☐ Yes ☐ No

COMMENTS/SAMPLE DISCREPANCY: According to the COC we were supposed to receive 4 WO "MW-39". We received one MW-39 sample and an extra sample "MW-43" that matches the second MW-39 time.

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Proje

WO#: 92537976

PM: BV Due Date: 05/18/21

CLIENT: 92-WSP

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1																6													
2																6													
3																6													
4																6													
5																6													
6																6													
7																6													
8																6													
9																6													
10																6													
11																6													
12																6													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Project #

WO#: 92537976

PM: BV Due Date: 05/18/21

CLIENT: 92-WSP

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1																6													
2																6													
3																6													
4																6													
5																6													
6																6													
7																6													
8																6													
9																6													
10																6													
11																2													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

WSP USA Office Address: Herndon, VA			No. 10587 — WSP
Project Name: Conflex Dump	WSP USA Contact Name: Molly Long		Laboratory Name & Location: Pace, NC
Project Location: Hanover MD	WSP USA Contact E-mail: Molly.long @wsp.com		Laboratory Project Manager: Bonnie V
Project Number & Task: 31401545.010 3	WSP USA Contact Phone: 703 709 6500		Requested Turn-Around-Time: (X) Standard ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ ___ HR
Sampler(s) Name(s): Molly Long	Sampler(s) Signature(s): MML		92537976

Requested Analyses & Preservatives: VOC 8260D; 1,4-Dioxane 8260D-SIM

Sample Identification	Matrix	Collection Start* Date	Collection Start* ~~Time~~	Collection Stop* ~~Date~~	Collection Stop* Time	Number of Containers	VOC 8260D	1,4-Dioxane 8260D-SIM	Sample Comments
MW-27D	AQ	5/9/21		10	45	6	X	X	001
MW-3				11	00	6	X	X	002
MW-43				11	15	6	X	X	003
MW-39				11	35	6	X	X	004
MW-39				11	45	6	X	X	005
MW-18				12	00	6	X	X	LC 5-11 ~~006~~ 006
MW-40D				13	05	6	X	X	~~006~~ 007
MW-38R				13	25	6	X	X	008
MW-44				14	25	6	X	X	009
MW-21D				14	50	6	X	X	010
MW-41D				15	05	6	X	X	011
MW-1D				15	50	6	X	X	012
MW-1				16	00	6	X	X	013
MW-22D				16	20	6	X	X	014
MW-20				16	40	6	X	X	015

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	5/10/21	1700					
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
			SE Hill	5-11-21	1140		

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

CHAIN-OF-CUSTODY RECORD

Page 2 of 7

WSP USA Office Address: Herndon, VA			No. 10583 WSP
Project Name: Kopfer Onsite	WSP USA Contact Name: Molly Long		Laboratory Name & Location: Pace, NC
Project Location: Hanover, MD	WSP USA Contact E-mail: Molly.Long@wsp.com		Laboratory Project Manager: Bonnie V
Project Number & Task: 31401545.410 13	WSP USA Contact Phone: 703 709 6500		Requested Turn-Around-Time: [X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR
Sampler(s) Name(s): Molly Long	Sampler(s) Signature(s): MM		

Requested Analyses & Preservatives: VOC 8260D; 1,4-dioxane 8260D SIM

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	VOC 8260D	1,4-dioxane 8260D SIM	Sample Comments	
DUP-20210509A	AQ	5/9/21		08	00	6	X	X	016	B
MW-4				16	55	6	X	X	017	
MW-9				17	05	6	X	X	018	B
MW-23D				17	15	6	X	X	019	
MW-16				17	50	6	X	X	020	B
MW-16D				18	00	6	X	X	021	B
DUP-20210509B				09	00	6	X	X	022	B
Trip Blank A		lab provided				4	X	X	023	A

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
MM	5/10/21	1700				Fedex	
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
			[signature] HLL	5-11-21	1140		

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

May 14, 2021

Eric Johnson
WSP USA
13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171

RE: Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 11, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP
Pam Robertson, WSP USA

Pace Analytical Services, LLC
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Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project:	Former Kop-Flex Facility Site
Pace Project No.:	92537963

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92537963001	**RW-1S**	Water	05/09/21 13:35	05/11/21 11:40
92537963002	**RW-2S**	Water	05/09/21 13:45	05/11/21 11:40
92537963003	**RW-3S**	Water	05/09/21 14:15	05/11/21 11:40
92537963004	**RW-1D**	Water	05/09/21 14:40	05/11/21 11:40
92537963005	**RW-2D**	Water	05/09/21 15:40	05/11/21 11:40

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92537963001	**RW-1S**	EPA 8260D	BSH	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537963002	**RW-2S**	EPA 8260D	BSH	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537963003	**RW-3S**	EPA 8260D	PM1	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537963004	**RW-1D**	EPA 8260D	BSH	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92537963005	**RW-2D**	EPA 8260D	PM1	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-1S **Lab ID: 92537963001** Collected: 05/09/21 13:35 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	62.5	2.5		05/13/21 18:15	67-64-1	v1
Benzene	ND	ug/L	2.5	2.5		05/13/21 18:15	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		05/13/21 18:15	74-97-5	
Bromodichloromethane	ND	ug/L	2.5	2.5		05/13/21 18:15	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		05/13/21 18:15	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		05/13/21 18:15	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	12.5	2.5		05/13/21 18:15	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		05/13/21 18:15	56-23-5	
Chlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	108-90-7	
Chloroethane	**15.0**	ug/L	2.5	2.5		05/13/21 18:15	75-00-3	
Chloroform	ND	ug/L	12.5	2.5		05/13/21 18:15	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		05/13/21 18:15	74-87-3	
2-Chlorotoluene	ND	ug/L	2.5	2.5		05/13/21 18:15	95-49-8	
4-Chlorotoluene	ND	ug/L	2.5	2.5		05/13/21 18:15	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5		05/13/21 18:15	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		05/13/21 18:15	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.5	2.5		05/13/21 18:15	106-93-4	
Dibromomethane	ND	ug/L	2.5	2.5		05/13/21 18:15	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		05/13/21 18:15	75-71-8	
1,1-Dichloroethane	**113**	ug/L	2.5	2.5		05/13/21 18:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.5	2.5		05/13/21 18:15	107-06-2	
1,1-Dichloroethene	**389**	ug/L	2.5	2.5		05/13/21 18:15	75-35-4	
cis-1,2-Dichloroethene	**2.9**	ug/L	2.5	2.5		05/13/21 18:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/13/21 18:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:15	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:15	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:15	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		05/13/21 18:15	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/13/21 18:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/13/21 18:15	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		05/13/21 18:15	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	2.5		05/13/21 18:15	87-68-3	
2-Hexanone	ND	ug/L	12.5	2.5		05/13/21 18:15	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.5	2.5		05/13/21 18:15	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		05/13/21 18:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		05/13/21 18:15	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		05/13/21 18:15	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		05/13/21 18:15	91-20-3	
Styrene	ND	ug/L	2.5	2.5		05/13/21 18:15	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/13/21 18:15	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/13/21 18:15	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-1S **Lab ID: 92537963001** Collected: 05/09/21 13:35 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.5	2.5		05/13/21 18:15	127-18-4	
Toluene	ND	ug/L	2.5	2.5		05/13/21 18:15	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		05/13/21 18:15	120-82-1	
1,1,1-Trichloroethane	**72.5**	ug/L	2.5	2.5		05/13/21 18:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		05/13/21 18:15	79-00-5	
Trichloroethene	**2.9**	ug/L	2.5	2.5		05/13/21 18:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		05/13/21 18:15	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		05/13/21 18:15	96-18-4	
Vinyl acetate	ND	ug/L	5.0	2.5		05/13/21 18:15	108-05-4	
Vinyl chloride	**4.2**	ug/L	2.5	2.5		05/13/21 18:15	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		05/13/21 18:15	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		05/13/21 18:15	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		05/13/21 18:15	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	2.5		05/13/21 18:15	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	2.5		05/13/21 18:15	17060-07-0	
Toluene-d8 (S)	93	%	70-130	2.5		05/13/21 18:15	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**291**	ug/L	10.0	5		05/12/21 13:50	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	70-130	5		05/12/21 13:50	17060-07-0	
Toluene-d8 (S)	92	%	66-133	5		05/12/21 13:50	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-2S **Lab ID: 92537963002** Collected: 05/09/21 13:45 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		05/13/21 17:03	67-64-1	v1
Benzene	ND	ug/L	2.0	2		05/13/21 17:03	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/13/21 17:03	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/13/21 17:03	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/13/21 17:03	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/13/21 17:03	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/13/21 17:03	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	10.0	2		05/13/21 17:03	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/13/21 17:03	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/13/21 17:03	108-90-7	
Chloroethane	ND	ug/L	2.0	2		05/13/21 17:03	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/13/21 17:03	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/13/21 17:03	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:03	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		05/13/21 17:03	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/13/21 17:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/13/21 17:03	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/13/21 17:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/13/21 17:03	75-71-8	
1,1-Dichloroethane	**32.4**	ug/L	2.0	2		05/13/21 17:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		05/13/21 17:03	107-06-2	
1,1-Dichloroethene	**184**	ug/L	2.0	2		05/13/21 17:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		05/13/21 17:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/13/21 17:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:03	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/13/21 17:03	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/13/21 17:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		05/13/21 17:03	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		05/13/21 17:03	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		05/13/21 17:03	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/13/21 17:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/13/21 17:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/13/21 17:03	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/13/21 17:03	91-20-3	
Styrene	ND	ug/L	2.0	2		05/13/21 17:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:03	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-2S **Lab ID: 92537963002** Collected: 05/09/21 13:45 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.0	2		05/13/21 17:03	127-18-4	
Toluene	ND	ug/L	2.0	2		05/13/21 17:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:03	120-82-1	
1,1,1-Trichloroethane	**221**	ug/L	2.0	2		05/13/21 17:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/13/21 17:03	79-00-5	
Trichloroethene	**2.1**	ug/L	2.0	2		05/13/21 17:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/13/21 17:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/13/21 17:03	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/13/21 17:03	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		05/13/21 17:03	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/13/21 17:03	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/13/21 17:03	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/13/21 17:03	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	2		05/13/21 17:03	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130	2		05/13/21 17:03	17060-07-0	
Toluene-d8 (S)	99	%	70-130	2		05/13/21 17:03	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**153**	ug/L	5.0	2.5		05/12/21 14:10	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	70-130	2.5		05/12/21 14:10	17060-07-0	
Toluene-d8 (S)	94	%	66-133	2.5		05/12/21 14:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-3S **Lab ID: 92537963003** Collected: 05/09/21 14:15 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 16:37	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 16:37	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 16:37	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 16:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 16:37	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 16:37	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 16:37	74-83-9	IK,v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 16:37	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 16:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 16:37	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 16:37	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 16:37	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 16:37	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 16:37	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 16:37	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 16:37	96-12-8	M1
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 16:37	124-48-1	M1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 16:37	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 16:37	74-95-3	M1
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 16:37	75-71-8	
1,1-Dichloroethane	**2.7**	ug/L	1.0	1		05/12/21 16:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/12/21 16:37	107-06-2	
1,1-Dichloroethene	**4.2**	ug/L	1.0	1		05/12/21 16:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 16:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 16:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 16:37	78-87-5	M1
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 16:37	142-28-9	M1
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 16:37	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 16:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 16:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 16:37	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 16:37	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 16:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 16:37	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 16:37	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 16:37	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 16:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 16:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 16:37	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 16:37	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 16:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 16:37	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 16:37	79-34-5	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-3S **Lab ID: 92537963003** Collected: 05/09/21 14:15 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 16:37	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 16:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:37	120-82-1	
1,1,1-Trichloroethane	**8.1**	ug/L	1.0	1		05/12/21 16:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 16:37	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 16:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 16:37	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 16:37	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 16:37	108-05-4	v1
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 16:37	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 16:37	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 16:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 16:37	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/12/21 16:37	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		05/12/21 16:37	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/12/21 16:37	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**13.2**	ug/L	2.0	1		05/11/21 16:08	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		05/11/21 16:08	17060-07-0	
Toluene-d8 (S)	112	%	66-133	1		05/11/21 16:08	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-1D **Lab ID: 92537963004** Collected: 05/09/21 14:40 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		05/13/21 17:21	67-64-1	v1
Benzene	ND	ug/L	2.0	2		05/13/21 17:21	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/13/21 17:21	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/13/21 17:21	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/13/21 17:21	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/13/21 17:21	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/13/21 17:21	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	10.0	2		05/13/21 17:21	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/13/21 17:21	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/13/21 17:21	108-90-7	
Chloroethane	**5.9**	ug/L	2.0	2		05/13/21 17:21	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/13/21 17:21	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/13/21 17:21	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:21	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/13/21 17:21	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		05/13/21 17:21	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/13/21 17:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/13/21 17:21	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/13/21 17:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:21	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/13/21 17:21	75-71-8	
1,1-Dichloroethane	**52.4**	ug/L	2.0	2		05/13/21 17:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		05/13/21 17:21	107-06-2	
1,1-Dichloroethene	**204**	ug/L	2.0	2		05/13/21 17:21	75-35-4	
cis-1,2-Dichloroethene	**2.3**	ug/L	2.0	2		05/13/21 17:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/13/21 17:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:21	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:21	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/13/21 17:21	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/13/21 17:21	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/13/21 17:21	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/13/21 17:21	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		05/13/21 17:21	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		05/13/21 17:21	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		05/13/21 17:21	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/13/21 17:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/13/21 17:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/13/21 17:21	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/13/21 17:21	91-20-3	
Styrene	ND	ug/L	2.0	2		05/13/21 17:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/13/21 17:21	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-1D **Lab ID: 92537963004** Collected: 05/09/21 14:40 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.0	2		05/13/21 17:21	127-18-4	
Toluene	ND	ug/L	2.0	2		05/13/21 17:21	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:21	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/13/21 17:21	120-82-1	
1,1,1-Trichloroethane	**5.5**	ug/L	2.0	2		05/13/21 17:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/13/21 17:21	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		05/13/21 17:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/13/21 17:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/13/21 17:21	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/13/21 17:21	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		05/13/21 17:21	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/13/21 17:21	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/13/21 17:21	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/13/21 17:21	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	2		05/13/21 17:21	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	2		05/13/21 17:21	17060-07-0	
Toluene-d8 (S)	98	%	70-130	2		05/13/21 17:21	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**77.7**	ug/L	2.0	1		05/11/21 16:27	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		05/11/21 16:27	17060-07-0	
Toluene-d8 (S)	111	%	66-133	1		05/11/21 16:27	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-2D **Lab ID: 92537963005** Collected: 05/09/21 15:40 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		05/12/21 16:55	67-64-1	
Benzene	ND	ug/L	1.0	1		05/12/21 16:55	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/12/21 16:55	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/12/21 16:55	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/12/21 16:55	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/12/21 16:55	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/12/21 16:55	74-83-9	IK,v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/12/21 16:55	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/12/21 16:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/12/21 16:55	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/12/21 16:55	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/12/21 16:55	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/12/21 16:55	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 16:55	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/12/21 16:55	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		05/12/21 16:55	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/12/21 16:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/12/21 16:55	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/12/21 16:55	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:55	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:55	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:55	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/12/21 16:55	75-71-8	
1,1-Dichloroethane	**16.8**	ug/L	1.0	1		05/12/21 16:55	75-34-3	
1,2-Dichloroethane	**1.1**	ug/L	1.0	1		05/12/21 16:55	107-06-2	
1,1-Dichloroethene	**104**	ug/L	1.0	1		05/12/21 16:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 16:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/12/21 16:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 16:55	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/12/21 16:55	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/12/21 16:55	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/12/21 16:55	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 16:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/12/21 16:55	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/12/21 16:55	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/12/21 16:55	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		05/12/21 16:55	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/12/21 16:55	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/12/21 16:55	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/12/21 16:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/12/21 16:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/12/21 16:55	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/12/21 16:55	91-20-3	
Styrene	ND	ug/L	1.0	1		05/12/21 16:55	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 16:55	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/12/21 16:55	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Sample: RW-2D **Lab ID: 92537963005** Collected: 05/09/21 15:40 Received: 05/11/21 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		05/12/21 16:55	127-18-4	
Toluene	ND	ug/L	1.0	1		05/12/21 16:55	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:55	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/12/21 16:55	120-82-1	
1,1,1-Trichloroethane	**4.2**	ug/L	1.0	1		05/12/21 16:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/12/21 16:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/12/21 16:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/12/21 16:55	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/12/21 16:55	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/12/21 16:55	108-05-4	v1
Vinyl chloride	ND	ug/L	1.0	1		05/12/21 16:55	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/12/21 16:55	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/12/21 16:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/12/21 16:55	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		05/12/21 16:55	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		05/12/21 16:55	17060-07-0	
Toluene-d8 (S)	97	%	70-130	1		05/12/21 16:55	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**62.8**	ug/L	2.0	1		05/11/21 16:46	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	89	%	70-130	1		05/11/21 16:46	17060-07-0	
Toluene-d8 (S)	111	%	66-133	1		05/11/21 16:46	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

QC Batch: 619922
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537963003, 92537963005

METHOD BLANK: 3261486 Matrix: Water
Associated Lab Samples: 92537963003, 92537963005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/12/21 15:07	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/12/21 15:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/12/21 15:07	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/12/21 15:07	
1,1-Dichloroethane	ug/L	ND	1.0	05/12/21 15:07	
1,1-Dichloroethene	ug/L	ND	1.0	05/12/21 15:07	
1,1-Dichloropropene	ug/L	ND	1.0	05/12/21 15:07	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/12/21 15:07	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/12/21 15:07	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/12/21 15:07	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	05/12/21 15:07	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/12/21 15:07	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/12/21 15:07	
1,2-Dichloroethane	ug/L	ND	1.0	05/12/21 15:07	
1,2-Dichloropropane	ug/L	ND	1.0	05/12/21 15:07	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/12/21 15:07	
1,3-Dichloropropane	ug/L	ND	1.0	05/12/21 15:07	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/12/21 15:07	
2,2-Dichloropropane	ug/L	ND	1.0	05/12/21 15:07	
2-Butanone (MEK)	ug/L	ND	5.0	05/12/21 15:07	
2-Chlorotoluene	ug/L	ND	1.0	05/12/21 15:07	
2-Hexanone	ug/L	ND	5.0	05/12/21 15:07	
4-Chlorotoluene	ug/L	ND	1.0	05/12/21 15:07	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/12/21 15:07	
Acetone	ug/L	ND	25.0	05/12/21 15:07	
Benzene	ug/L	ND	1.0	05/12/21 15:07	
Bromobenzene	ug/L	ND	1.0	05/12/21 15:07	
Bromochloromethane	ug/L	ND	1.0	05/12/21 15:07	
Bromodichloromethane	ug/L	ND	1.0	05/12/21 15:07	
Bromoform	ug/L	ND	1.0	05/12/21 15:07	
Bromomethane	ug/L	ND	2.0	05/12/21 15:07	IK,v2
Carbon tetrachloride	ug/L	ND	1.0	05/12/21 15:07	
Chlorobenzene	ug/L	ND	1.0	05/12/21 15:07	
Chloroethane	ug/L	ND	1.0	05/12/21 15:07	
Chloroform	ug/L	ND	5.0	05/12/21 15:07	
Chloromethane	ug/L	ND	1.0	05/12/21 15:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/12/21 15:07	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/12/21 15:07	
Dibromochloromethane	ug/L	ND	1.0	05/12/21 15:07	
Dibromomethane	ug/L	ND	1.0	05/12/21 15:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

METHOD BLANK: 3261486 Matrix: Water
Associated Lab Samples: 92537963003, 92537963005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/12/21 15:07	
Diisopropyl ether	ug/L	ND	1.0	05/12/21 15:07	
Ethylbenzene	ug/L	ND	1.0	05/12/21 15:07	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/12/21 15:07	
m&p-Xylene	ug/L	ND	2.0	05/12/21 15:07	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/12/21 15:07	
Methylene Chloride	ug/L	ND	5.0	05/12/21 15:07	
Naphthalene	ug/L	ND	1.0	05/12/21 15:07	
o-Xylene	ug/L	ND	1.0	05/12/21 15:07	
p-Isopropyltoluene	ug/L	ND	1.0	05/12/21 15:07	
Styrene	ug/L	ND	1.0	05/12/21 15:07	
Tetrachloroethene	ug/L	ND	1.0	05/12/21 15:07	
Toluene	ug/L	ND	1.0	05/12/21 15:07	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/12/21 15:07	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/12/21 15:07	
Trichloroethene	ug/L	ND	1.0	05/12/21 15:07	
Trichlorofluoromethane	ug/L	ND	1.0	05/12/21 15:07	
Vinyl acetate	ug/L	ND	2.0	05/12/21 15:07	v1
Vinyl chloride	ug/L	ND	1.0	05/12/21 15:07	
Xylene (Total)	ug/L	ND	1.0	05/12/21 15:07	
1,2-Dichloroethane-d4 (S)	%	98	70-130	05/12/21 15:07	
4-Bromofluorobenzene (S)	%	99	70-130	05/12/21 15:07	
Toluene-d8 (S)	%	97	70-130	05/12/21 15:07	

LABORATORY CONTROL SAMPLE: 3261487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.5	105	70-130	
1,1,1-Trichloroethane	ug/L	50	47.4	95	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	55.9	112	70-130	
1,1,2-Trichloroethane	ug/L	50	52.3	105	70-130	
1,1-Dichloroethane	ug/L	50	49.5	99	70-130	
1,1-Dichloroethene	ug/L	50	46.7	93	70-132	
1,1-Dichloropropene	ug/L	50	48.8	98	70-131	
1,2,3-Trichlorobenzene	ug/L	50	53.7	107	70-134	
1,2,3-Trichloropropane	ug/L	50	52.9	106	70-130	
1,2,4-Trichlorobenzene	ug/L	50	51.6	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	57.7	115	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	53.8	108	70-130	
1,2-Dichlorobenzene	ug/L	50	48.5	97	70-130	
1,2-Dichloroethane	ug/L	50	48.5	97	70-130	
1,2-Dichloropropane	ug/L	50	52.6	105	70-130	
1,3-Dichlorobenzene	ug/L	50	48.4	97	70-130	
1,3-Dichloropropane	ug/L	50	53.0	106	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

LABORATORY CONTROL SAMPLE: 3261487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	49.5	99	70-130	
2,2-Dichloropropane	ug/L	50	49.7	99	70-130	
2-Butanone (MEK)	ug/L	100	110	110	70-133	
2-Chlorotoluene	ug/L	50	49.6	99	70-130	
2-Hexanone	ug/L	100	113	113	70-130	
4-Chlorotoluene	ug/L	50	48.1	96	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	70-130	
Acetone	ug/L	100	118	118	70-144	
Benzene	ug/L	50	51.8	104	70-130	
Bromobenzene	ug/L	50	49.3	99	70-130	
Bromochloromethane	ug/L	50	52.7	105	70-130	
Bromodichloromethane	ug/L	50	51.3	103	70-130	
Bromoform	ug/L	50	54.8	110	70-131	
Bromomethane	ug/L	50	37.1	74	30-177	IK,v3
Carbon tetrachloride	ug/L	50	50.4	101	70-130	
Chlorobenzene	ug/L	50	51.8	104	70-130	
Chloroethane	ug/L	50	51.6	103	46-131	
Chloroform	ug/L	50	50.4	101	70-130	
Chloromethane	ug/L	50	41.3	83	49-130	
cis-1,2-Dichloroethene	ug/L	50	49.2	98	70-130	
cis-1,3-Dichloropropene	ug/L	50	53.1	106	70-130	
Dibromochloromethane	ug/L	50	54.8	110	70-130	
Dibromomethane	ug/L	50	54.4	109	70-130	
Dichlorodifluoromethane	ug/L	50	38.5	77	52-134	
Diisopropyl ether	ug/L	50	49.0	98	70-131	
Ethylbenzene	ug/L	50	51.3	103	70-130	
Hexachloro-1,3-butadiene	ug/L	50	51.4	103	70-131	
m&p-Xylene	ug/L	100	103	103	70-130	
Methyl-tert-butyl ether	ug/L	50	50.2	100	70-130	
Methylene Chloride	ug/L	50	41.8	84	68-130	
Naphthalene	ug/L	50	54.6	109	70-133	
o-Xylene	ug/L	50	52.4	105	70-130	
p-Isopropyltoluene	ug/L	50	49.9	100	70-130	
Styrene	ug/L	50	53.0	106	70-130	
Tetrachloroethene	ug/L	50	49.4	99	70-130	
Toluene	ug/L	50	50.1	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	50.7	101	70-130	
trans-1,3-Dichloropropene	ug/L	50	52.1	104	70-130	
Trichloroethene	ug/L	50	51.2	102	70-130	
Trichlorofluoromethane	ug/L	50	40.2	80	61-130	
Vinyl acetate	ug/L	100	113	113	70-140	v1
Vinyl chloride	ug/L	50	44.3	89	59-142	
Xylene (Total)	ug/L	150	156	104	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	
Toluene-d8 (S)	%			100	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3261488 3261489

Parameter	Units	92537963003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	24.0	26.6	120	133	70-135	11	30	
1,1,1-Trichloroethane	ug/L	8.1	20	20	32.7	34.0	123	129	70-148	4	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	25.6	28.0	128	140	70-131	9	30	M1
1,1,2-Trichloroethane	ug/L	ND	20	20	24.8	26.5	124	133	70-136	7	30	
1,1-Dichloroethane	ug/L	2.7	20	20	28.3	30.2	128	138	70-147	7	30	
1,1-Dichloroethene	ug/L	4.2	20	20	29.0	30.2	124	130	70-158	4	30	
1,1-Dichloropropene	ug/L	ND	20	20	25.3	27.6	126	138	70-149	9	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	23.0	25.7	115	128	68-140	11	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	24.0	26.3	120	132	67-137	9	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.5	24.8	112	124	70-139	10	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	23.9	27.3	120	137	69-136	13	30	M1
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	24.2	26.9	121	134	70-137	11	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	22.2	24.3	111	121	70-133	9	30	
1,2-Dichloroethane	ug/L	ND	20	20	23.9	25.7	119	128	67-138	7	30	
1,2-Dichloropropane	ug/L	ND	20	20	27.4	28.6	137	143	70-138	4	30	M1
1,3-Dichlorobenzene	ug/L	ND	20	20	22.7	24.4	114	122	70-133	7	30	
1,3-Dichloropropane	ug/L	ND	20	20	25.1	27.7	125	138	70-136	10	30	M1
1,4-Dichlorobenzene	ug/L	ND	20	20	22.4	24.6	112	123	70-133	9	30	
2,2-Dichloropropane	ug/L	ND	20	20	25.6	27.9	128	139	52-155	9	30	
2-Butanone (MEK)	ug/L	ND	40	40	51.3	56.8	128	142	61-147	10	30	
2-Chlorotoluene	ug/L	ND	20	20	23.3	25.3	117	127	70-141	8	30	
2-Hexanone	ug/L	ND	40	40	49.7	55.7	124	139	67-139	11	30	
4-Chlorotoluene	ug/L	ND	20	20	22.8	24.7	114	123	70-135	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	49.7	53.7	124	134	67-136	8	30	
Acetone	ug/L	ND	40	40	52.3	57.2	131	143	55-159	9	30	v1
Benzene	ug/L	ND	20	20	26.0	29.4	130	147	67-150	12	30	
Bromobenzene	ug/L	ND	20	20	23.3	25.1	116	125	70-134	8	30	
Bromochloromethane	ug/L	ND	20	20	26.0	27.4	130	137	70-146	5	30	
Bromodichloromethane	ug/L	ND	20	20	25.2	26.5	126	133	70-138	5	30	
Bromoform	ug/L	ND	20	20	23.3	26.0	116	130	57-138	11	30	
Bromomethane	ug/L	ND	20	20	22.2	23.1	111	116	10-200	4	30	IK
Carbon tetrachloride	ug/L	ND	20	20	25.3	27.9	126	140	70-147	10	30	
Chlorobenzene	ug/L	ND	20	20	24.7	26.9	124	135	70-137	8	30	
Chloroethane	ug/L	ND	20	20	26.6	27.4	133	137	51-166	3	30	
Chloroform	ug/L	ND	20	20	26.0	27.9	130	139	70-144	7	30	
Chloromethane	ug/L	ND	20	20	24.3	27.9	121	139	24-161	14	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	25.6	27.3	128	136	67-148	6	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	25.1	25.9	126	129	70-142	3	30	
Dibromochloromethane	ug/L	ND	20	20	24.6	27.7	123	139	68-138	12	30	M1
Dibromomethane	ug/L	ND	20	20	25.6	27.4	128	137	70-134	7	30	M1
Dichlorodifluoromethane	ug/L	ND	20	20	20.0	21.8	100	109	43-155	9	30	
Diisopropyl ether	ug/L	ND	20	20	24.1	25.8	120	129	65-146	7	30	
Ethylbenzene	ug/L	ND	20	20	24.2	26.6	121	133	68-143	9	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	25.8	26.2	129	131	62-151	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3261488 3261489

Parameter	Units	92537963003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	40	40	48.2	52.7	120	132	53-157	9	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	23.8	26.7	119	133	59-156	11	30	
Methylene Chloride	ug/L	ND	20	20	17.9	21.0	90	105	64-148	16	30	
Naphthalene	ug/L	ND	20	20	22.5	25.3	112	127	57-150	12	30	
o-Xylene	ug/L	ND	20	20	23.8	26.1	119	130	68-143	9	30	
p-Isopropyltoluene	ug/L	ND	20	20	23.3	24.8	116	124	70-141	6	30	
Styrene	ug/L	ND	20	20	23.9	26.2	120	131	70-136	9	30	
Tetrachloroethene	ug/L	ND	20	20	23.4	26.6	117	133	70-139	13	30	
Toluene	ug/L	ND	20	20	24.8	25.6	124	128	47-157	3	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	26.1	29.0	131	145	70-149	11	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	24.2	26.1	121	131	70-138	8	30	
Trichloroethene	ug/L	ND	20	20	25.3	27.3	127	136	70-149	7	30	
Trichlorofluoromethane	ug/L	ND	20	20	22.1	23.6	110	118	61-154	7	30	
Vinyl acetate	ug/L	ND	40	40	53.9	57.8	135	145	48-156	7	30	
Vinyl chloride	ug/L	ND	20	20	23.8	27.3	119	136	55-172	14	30	
Xylene (Total)	ug/L	ND	60	60	71.9	78.7	120	131	66-145	9	30	
1,2-Dichloroethane-d4 (S)	%						97	90	70-130			
4-Bromofluorobenzene (S)	%						101	101	70-130			
Toluene-d8 (S)	%						100	96	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

QC Batch: 620213
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537963001, 92537963002, 92537963004

METHOD BLANK: 3263117 Matrix: Water
Associated Lab Samples: 92537963001, 92537963002, 92537963004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1-Dichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,1-Dichloroethene	ug/L	ND	1.0	05/13/21 12:16	
1,1-Dichloropropene	ug/L	ND	1.0	05/13/21 12:16	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/13/21 12:16	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	05/13/21 12:16	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichloroethane	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichloropropane	ug/L	ND	1.0	05/13/21 12:16	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
1,3-Dichloropropane	ug/L	ND	1.0	05/13/21 12:16	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
2,2-Dichloropropane	ug/L	ND	1.0	05/13/21 12:16	
2-Butanone (MEK)	ug/L	ND	5.0	05/13/21 12:16	
2-Chlorotoluene	ug/L	ND	1.0	05/13/21 12:16	
2-Hexanone	ug/L	ND	5.0	05/13/21 12:16	
4-Chlorotoluene	ug/L	ND	1.0	05/13/21 12:16	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/13/21 12:16	
Acetone	ug/L	ND	25.0	05/13/21 12:16	v1
Benzene	ug/L	ND	1.0	05/13/21 12:16	
Bromobenzene	ug/L	ND	1.0	05/13/21 12:16	
Bromochloromethane	ug/L	ND	1.0	05/13/21 12:16	
Bromodichloromethane	ug/L	ND	1.0	05/13/21 12:16	
Bromoform	ug/L	ND	1.0	05/13/21 12:16	
Bromomethane	ug/L	ND	2.0	05/13/21 12:16	IK
Carbon tetrachloride	ug/L	ND	1.0	05/13/21 12:16	
Chlorobenzene	ug/L	ND	1.0	05/13/21 12:16	
Chloroethane	ug/L	ND	1.0	05/13/21 12:16	
Chloroform	ug/L	ND	5.0	05/13/21 12:16	
Chloromethane	ug/L	ND	1.0	05/13/21 12:16	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/13/21 12:16	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/13/21 12:16	
Dibromochloromethane	ug/L	ND	1.0	05/13/21 12:16	
Dibromomethane	ug/L	ND	1.0	05/13/21 12:16	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

METHOD BLANK: 3263117 Matrix: Water
Associated Lab Samples: 92537963001, 92537963002, 92537963004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/13/21 12:16	
Diisopropyl ether	ug/L	ND	1.0	05/13/21 12:16	
Ethylbenzene	ug/L	ND	1.0	05/13/21 12:16	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/13/21 12:16	
m&p-Xylene	ug/L	ND	2.0	05/13/21 12:16	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/13/21 12:16	
Methylene Chloride	ug/L	ND	5.0	05/13/21 12:16	
Naphthalene	ug/L	ND	1.0	05/13/21 12:16	
o-Xylene	ug/L	ND	1.0	05/13/21 12:16	
p-Isopropyltoluene	ug/L	ND	1.0	05/13/21 12:16	
Styrene	ug/L	ND	1.0	05/13/21 12:16	
Tetrachloroethene	ug/L	ND	1.0	05/13/21 12:16	
Toluene	ug/L	ND	1.0	05/13/21 12:16	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/13/21 12:16	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/13/21 12:16	
Trichloroethene	ug/L	ND	1.0	05/13/21 12:16	
Trichlorofluoromethane	ug/L	ND	1.0	05/13/21 12:16	
Vinyl acetate	ug/L	ND	2.0	05/13/21 12:16	
Vinyl chloride	ug/L	ND	1.0	05/13/21 12:16	
Xylene (Total)	ug/L	ND	1.0	05/13/21 12:16	
1,2-Dichloroethane-d4 (S)	%	97	70-130	05/13/21 12:16	
4-Bromofluorobenzene (S)	%	98	70-130	05/13/21 12:16	
Toluene-d8 (S)	%	99	70-130	05/13/21 12:16	

LABORATORY CONTROL SAMPLE: 3263118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.4	107	70-130	
1,1,1-Trichloroethane	ug/L	50	49.1	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	70-130	
1,1,2-Trichloroethane	ug/L	50	51.0	102	70-130	
1,1-Dichloroethane	ug/L	50	54.2	108	70-130	
1,1-Dichloroethene	ug/L	50	49.5	99	70-132	
1,1-Dichloropropene	ug/L	50	50.7	101	70-131	
1,2,3-Trichlorobenzene	ug/L	50	54.9	110	70-134	
1,2,3-Trichloropropane	ug/L	50	55.1	110	70-130	
1,2,4-Trichlorobenzene	ug/L	50	53.1	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	58.5	117	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	53.5	107	70-130	
1,2-Dichlorobenzene	ug/L	50	49.6	99	70-130	
1,2-Dichloroethane	ug/L	50	50.0	100	70-130	
1,2-Dichloropropane	ug/L	50	54.1	108	70-130	
1,3-Dichlorobenzene	ug/L	50	50.4	101	70-130	
1,3-Dichloropropane	ug/L	50	53.3	107	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

LABORATORY CONTROL SAMPLE: 3263118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	50.0	100	70-130	
2,2-Dichloropropane	ug/L	50	51.3	103	70-130	
2-Butanone (MEK)	ug/L	100	117	117	70-133	
2-Chlorotoluene	ug/L	50	50.9	102	70-130	
2-Hexanone	ug/L	100	117	117	70-130	
4-Chlorotoluene	ug/L	50	50.3	101	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	70-130	
Acetone	ug/L	100	128	128	70-144	v1
Benzene	ug/L	50	53.2	106	70-130	
Bromobenzene	ug/L	50	50.3	101	70-130	
Bromochloromethane	ug/L	50	53.6	107	70-130	
Bromodichloromethane	ug/L	50	51.6	103	70-130	
Bromoform	ug/L	50	54.8	110	70-131	
Bromomethane	ug/L	50	36.7	73	30-177	IK
Carbon tetrachloride	ug/L	50	50.5	101	70-130	
Chlorobenzene	ug/L	50	52.6	105	70-130	
Chloroethane	ug/L	50	50.9	102	46-131	
Chloroform	ug/L	50	52.7	105	70-130	
Chloromethane	ug/L	50	52.9	106	49-130	
cis-1,2-Dichloroethene	ug/L	50	52.3	105	70-130	
cis-1,3-Dichloropropene	ug/L	50	52.4	105	70-130	
Dibromochloromethane	ug/L	50	55.1	110	70-130	
Dibromomethane	ug/L	50	53.3	107	70-130	
Dichlorodifluoromethane	ug/L	50	37.4	75	52-134	
Diisopropyl ether	ug/L	50	53.8	108	70-131	
Ethylbenzene	ug/L	50	51.9	104	70-130	
Hexachloro-1,3-butadiene	ug/L	50	54.1	108	70-131	
m&p-Xylene	ug/L	100	104	104	70-130	
Methyl-tert-butyl ether	ug/L	50	53.6	107	70-130	
Methylene Chloride	ug/L	50	46.9	94	68-130	
Naphthalene	ug/L	50	56.3	113	70-133	
o-Xylene	ug/L	50	52.2	104	70-130	
p-Isopropyltoluene	ug/L	50	50.5	101	70-130	
Styrene	ug/L	50	53.4	107	70-130	
Tetrachloroethene	ug/L	50	49.9	100	70-130	
Toluene	ug/L	50	49.0	98	70-130	
trans-1,2-Dichloroethene	ug/L	50	55.8	112	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.2	102	70-130	
Trichloroethene	ug/L	50	51.4	103	70-130	
Trichlorofluoromethane	ug/L	50	41.7	83	61-130	
Vinyl acetate	ug/L	100	122	122	70-140	
Vinyl chloride	ug/L	50	47.5	95	59-142	
Xylene (Total)	ug/L	150	156	104	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			95	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3263119 3263120

Parameter	Units	92537746001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	400	400	582	433	146	108	70-135	29	30	M1
1,1,1-Trichloroethane	ug/L	ND	400	400	589	438	147	110	70-148	29	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	400	400	618	453	154	113	70-131	31	30	M1,R1
1,1,2-Trichloroethane	ug/L	ND	400	400	581	426	145	106	70-136	31	30	M1,R1
1,1-Dichloroethane	ug/L	ND	400	400	640	472	160	118	70-147	30	30	M1
1,1-Dichloroethene	ug/L	ND	400	400	604	444	151	111	70-158	30	30	
1,1-Dichloropropene	ug/L	ND	400	400	620	454	155	113	70-149	31	30	M1,R1
1,2,3-Trichlorobenzene	ug/L	ND	400	400	575	444	144	111	68-140	26	30	M1
1,2,3-Trichloropropane	ug/L	ND	400	400	ND	ND	0	0	67-137		30	M1
1,2,4-Trichlorobenzene	ug/L	ND	400	400	552	431	138	108	70-139	25	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	400	400	608	460	152	115	69-136	28	30	M1
1,2-Dibromoethane (EDB)	ug/L	ND	400	400	590	440	148	110	70-137	29	30	M1
1,2-Dichlorobenzene	ug/L	ND	400	400	540	414	135	104	70-133	26	30	M1
1,2-Dichloroethane	ug/L	ND	400	400	556	413	139	103	67-138	30	30	M1
1,2-Dichloropropane	ug/L	ND	400	400	646	483	161	121	70-138	29	30	M1
1,3-Dichlorobenzene	ug/L	ND	400	400	546	424	137	106	70-133	25	30	M1
1,3-Dichloropropane	ug/L	ND	400	400	605	449	151	112	70-136	30	30	M1
1,4-Dichlorobenzene	ug/L	ND	400	400	542	417	136	104	70-133	26	30	M1
2,2-Dichloropropane	ug/L	ND	400	400	548	410	137	102	52-155	29	30	
2-Butanone (MEK)	ug/L	ND	800	800	1290	927	161	116	61-147	33	30	M1,R1
2-Chlorotoluene	ug/L	ND	400	400	951	617	238	154	70-141	43	30	M1,R1
2-Hexanone	ug/L	ND	800	800	1240	884	154	111	67-139	33	30	M1,R1
4-Chlorotoluene	ug/L	ND	400	400	549	421	137	105	70-135	26	30	M1
4-Methyl-2-pentanone (MIBK)	ug/L	ND	800	800	1170	842	147	105	67-136	33	30	M1,R1
Acetone	ug/L	ND	800	800	1350	994	169	124	55-159	31	30	M1,R1, v1
Benzene	ug/L	3180	400	400	4040	3720	215	135	67-150	8	30	E,M1
Bromobenzene	ug/L	ND	400	400	548	425	137	106	70-134	25	30	M1
Bromochloromethane	ug/L	ND	400	400	625	470	156	118	70-146	28	30	M1
Bromodichloromethane	ug/L	ND	400	400	580	436	145	109	70-138	28	30	M1
Bromoform	ug/L	ND	400	400	555	415	139	104	57-138	29	30	M1
Bromomethane	ug/L	ND	400	400	591	411	148	103	10-200	36	30	IK,R1
Carbon tetrachloride	ug/L	ND	400	400	594	451	149	113	70-147	27	30	M1
Chlorobenzene	ug/L	ND	400	400	593	445	148	111	70-137	29	30	M1
Chloroethane	ug/L	ND	400	400	692	640	173	160	51-166	8	30	M1
Chloroform	ug/L	ND	400	400	636	468	158	116	70-144	30	30	M1
Chloromethane	ug/L	ND	400	400	612	437	153	109	24-161	33	30	R1
cis-1,2-Dichloroethene	ug/L	ND	400	400	618	461	155	115	67-148	29	30	M1
cis-1,3-Dichloropropene	ug/L	ND	400	400	559	418	140	105	70-142	29	30	
Dibromochloromethane	ug/L	ND	400	400	599	438	150	110	68-138	31	30	M1,R1
Dibromomethane	ug/L	ND	400	400	596	443	149	111	70-134	30	30	M1
Dichlorodifluoromethane	ug/L	ND	400	400	478	357	119	89	43-155	29	30	
Diisopropyl ether	ug/L	26.1	400	400	638	478	153	113	65-146	29	30	M1
Ethylbenzene	ug/L	1680	400	400	2360	2170	169	124	68-143	8	30	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3263119 3263120

Parameter	Units	92537746001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Hexachloro-1,3-butadiene	ug/L	ND	400	400	570	442	142	110	62-151	25	30	
m&p-Xylene	ug/L	5900	800	800	7320	6870	177	121	53-157	6	30	M1
Methyl-tert-butyl ether	ug/L	524	400	400	1180	994	165	117	59-156	17	30	M1
Methylene Chloride	ug/L	ND	400	400	499	331	125	83	64-148	41	30	R1
Naphthalene	ug/L	758	400	400	1420	1260	166	126	57-150	12	30	M1
o-Xylene	ug/L	3320	400	400	4070	3830	188	127	68-143	6	30	E,M1
p-Isopropyltoluene	ug/L	ND	400	400	587	456	147	114	70-141	25	30	M1
Styrene	ug/L	ND	400	400	696	547	174	137	70-136	24	30	M1
Tetrachloroethene	ug/L	ND	400	400	563	420	141	105	70-139	29	30	M1
Toluene	ug/L	685	400	400	1310	1130	156	111	47-157	15	30	
trans-1,2-Dichloroethene	ug/L	ND	400	400	638	479	159	120	70-149	28	30	M1
trans-1,3-Dichloropropene	ug/L	ND	400	400	547	401	137	100	70-138	31	30	R1
Trichloroethene	ug/L	ND	400	400	608	450	152	112	70-149	30	30	M1
Trichlorofluoromethane	ug/L	ND	400	400	532	393	133	98	61-154	30	30	
Vinyl acetate	ug/L	ND	800	800	1310	960	164	120	48-156	31	30	M1,R1
Vinyl chloride	ug/L	ND	400	400	620	462	155	115	55-172	29	30	
Xylene (Total)	ug/L	9230	1200	1200	11400	10700	180	123	66-145	6	30	ES,MS
1,2-Dichloroethane-d4 (S)	%						89	94	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						96	95	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

QC Batch: 619690
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537963003, 92537963004, 92537963005

METHOD BLANK: 3260219 Matrix: Water
Associated Lab Samples: 92537963003, 92537963004, 92537963005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/11/21 14:52	
1,2-Dichloroethane-d4 (S)	%	89	70-130	05/11/21 14:52	
Toluene-d8 (S)	%	111	66-133	05/11/21 14:52	

LABORATORY CONTROL SAMPLE: 3260220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.9	99	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
Toluene-d8 (S)	%			113	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3260221 3260222

Parameter	Units	92537966014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	22.6	20	20	41.5	43.1	95	103	64-141	4	30	
1,2-Dichloroethane-d4 (S)	%						88	91	70-130		30	
Toluene-d8 (S)	%						109	109	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

QC Batch: 619924
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92537963001, 92537963002

METHOD BLANK: 3261494 Matrix: Water
Associated Lab Samples: 92537963001, 92537963002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/12/21 13:11	
1,2-Dichloroethane-d4 (S)	%	106	70-130	05/12/21 13:11	
Toluene-d8 (S)	%	92	66-133	05/12/21 13:11	

LABORATORY CONTROL SAMPLE: 3261495

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.0	100	70-130	
1,2-Dichloroethane-d4 (S)	%			105	70-130	
Toluene-d8 (S)	%			93	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3261496 3261497

Parameter	Units	92537963001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	291	100	100	398	381	107	90	64-141	4	30	
1,2-Dichloroethane-d4 (S)	%						108	106	70-130		30	
Toluene-d8 (S)	%						91	92	66-133		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
ES	The reported result is estimated because one or more of the constituent results are qualified as such.
IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MS	Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.
R1	RPD value was outside control limits.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Former Kop-Flex Facility Site
Pace Project No.: 92537963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92537963001	**RW-1S**	EPA 8260D	620213		
92537963002	**RW-2S**	EPA 8260D	620213		
92537963003	**RW-3S**	EPA 8260D	619922		
92537963004	**RW-1D**	EPA 8260D	620213		
92537963005	**RW-2D**	EPA 8260D	619922		
92537963001	**RW-1S**	EPA 8260D Mod.	619924		
92537963002	**RW-2S**	EPA 8260D Mod.	619924		
92537963003	**RW-3S**	EPA 8260D Mod.	619690		
92537963004	**RW-1D**	EPA 8260D Mod.	619690		
92537963005	**RW-2D**	EPA 8260D Mod.	619690		

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☒ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: WSP VA

Projec **WO# : 92537963**

92537963

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Custody Seal Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Date/Initials Person Examining Contents: 5-11-21 LL

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Thermometer: ☒ IR Gun ID: 92T064

Type of Ice: ☒ Wet ☐ Blue ☐ None

Cooler Temp: 3.3, 2.1, 4.1 (1.6) Correction Factor: Add/Subtract (°C) 0.0°C

Cooler Temp Corrected (°C): 3.3, 2.1, 4.1, 1.8

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

				Comments/Discrepancy:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☒ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	4.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☒ N/A	8.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☒ No	☐ N/A	10.
Trip Blank Present?	☒ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Projec **WO# : 92537963**

PM: BV Due Date: 05/18/21

CLIENT: 92-WSP

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A
1																6												
2																6												
3																6												
4																6												
5																6												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WSP USA Office Address	Herndon, VA
Project Name	Kaflex System
Project Location	Hanover, MD
Project Number & Task	31401545.0103
Sampler(s) Name(s)	Molly Long
WSP USA Contact Name	Molly Long
WSP USA Contact E-mail	Molly.long@wsp.com
WSP USA Contact Phone	703 709 6500
Sampler(s) Signature(s)	

No. 008142

Laboratory Name & Location	Pace, NC
Laboratory Project Manager	Bonnie V.
Requested Turn-Around-Time	☒ Standard ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ ___ HR
	92537963

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	Requested Analyses & Preservatives: VOC 8260D	1,4-dioxane 8260D+ SIM	Sample Comments
RW-1S	AQ	5/9/2021		13	35	6	x	x	001
RW-2S				13	45	6	x	x	002
RW-3S				14	15	6	x	x	003
RW-1D				14	40	6	x	x	004
RW-2D				15	40	6	x	x	005

	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
Relinquished By (Signature)	5/10/21	1700				fedex	
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
				5-11-21	7:40		

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 29, 2021

Eric Johnson
WSP USA
13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171

RE: Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92572915001	**MW-3**	Water	11/14/21 09:35	11/17/21 10:15
92572915002	**MW-27D**	Water	11/14/21 10:00	11/17/21 10:15
92572915003	**MW-43**	Water	11/14/21 10:10	11/17/21 10:15
92572915004	**MW-39**	Water	11/14/21 10:25	11/17/21 10:15
92572915005	**MW-38R**	Water	11/14/21 10:35	11/17/21 10:15
92572915006	**MW-42**	Water	11/14/21 10:50	11/17/21 10:15
92572915007	**MW-18**	Water	11/14/21 11:00	11/17/21 10:15
92572915008	**MW-40D**	Water	11/14/21 11:15	11/17/21 10:15
92572915009	**MW-5R**	Water	11/14/21 11:25	11/17/21 10:15
92572915010	**MW-44**	Water	11/14/21 11:40	11/17/21 10:15
92572915011	**MW-21D**	Water	11/14/21 11:55	11/17/21 10:15
92572915012	**MW-41D**	Water	11/14/21 13:00	11/17/21 10:15
92572915013	**MW-1**	Water	11/14/21 13:15	11/17/21 10:15
92572915014	**MW-1D**	Water	11/14/21 13:25	11/17/21 10:15
92572915015	**MW-22D**	Water	11/14/21 13:40	11/17/21 10:15
92572915016	**MW-4**	Water	11/14/21 13:50	11/17/21 10:15
92572915017	**MW-20**	Water	11/14/21 14:00	11/17/21 10:15
92572915018	**MW-9**	Water	11/14/21 14:15	11/17/21 10:15
92572915019	**MW-23D**	Water	11/14/21 14:45	11/17/21 10:15
92572915020	**DUP-111421**	Water	11/14/21 12:00	11/17/21 10:15
92572915021	**MW-16**	Water	11/14/21 15:00	11/17/21 10:15
92572915022	**MW-16D**	Water	11/14/21 15:10	11/17/21 10:15
92572915023	**TRIP BLANK**	Water	11/14/21 00:00	11/17/21 10:15

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92572915001	MW-3	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915002	MW-27D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915003	MW-43	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915004	MW-39	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915005	MW-38R	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915006	MW-42	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915007	MW-18	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915008	MW-40D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915009	MW-5R	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915010	MW-44	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915011	MW-21D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915012	MW-41D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915013	MW-1	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915014	MW-1D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915015	MW-22D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915016	MW-4	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915017	MW-20	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915018	MW-9	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915019	MW-23D	EPA 8260D	CL	63	PASI-C

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SAMPLE ANALYTE COUNT

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260D Mod.	LMB	3	PASI-C
92572915020	**DUP-111421**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915021	**MW-16**	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915022	**MW-16D**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92572915023	**TRIP BLANK**	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-3 **Lab ID: 92572915001** Collected: 11/14/21 09:35 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 16:49	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 16:49	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 16:49	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 16:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 16:49	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 16:49	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 16:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 16:49	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 16:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 16:49	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 16:49	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 16:49	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 16:49	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 16:49	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 16:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 16:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 16:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 16:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 16:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:49	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 16:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 16:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 16:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 16:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 16:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 16:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 16:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 16:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 16:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 16:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 16:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 16:49	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 16:49	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 16:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 16:49	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 16:49	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 16:49	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 16:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 16:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 16:49	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 16:49	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 16:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 16:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 16:49	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-3 **Lab ID: 92572915001** Collected: 11/14/21 09:35 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 16:49	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 16:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 16:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 16:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 16:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 16:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 16:49	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 16:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 16:49	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 16:49	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 16:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 16:49	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 16:49	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130	1		11/18/21 16:49	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/18/21 16:49	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 16:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		11/17/21 16:51	17060-07-0	
Toluene-d8 (S)	103	%	66-133	1		11/17/21 16:51	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-27D **Lab ID: 92572915002** Collected: 11/14/21 10:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 17:07	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 17:07	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 17:07	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 17:07	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 17:07	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 17:07	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 17:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 17:07	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 17:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 17:07	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 17:07	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 17:07	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 17:07	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 17:07	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 17:07	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 17:07	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 17:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 17:07	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 17:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:07	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 17:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 17:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 17:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:07	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:07	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:07	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:07	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:07	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 17:07	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 17:07	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 17:07	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 17:07	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 17:07	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 17:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 17:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 17:07	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 17:07	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 17:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 17:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 17:07	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-27D **Lab ID: 92572915002** Collected: 11/14/21 10:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 17:07	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 17:07	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:07	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 17:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 17:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 17:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 17:07	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 17:07	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 17:07	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 17:07	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 17:07	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 17:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 17:07	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		11/18/21 17:07	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		11/18/21 17:07	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/18/21 17:07	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 17:10	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		11/17/21 17:10	17060-07-0	
Toluene-d8 (S)	102	%	66-133	1		11/17/21 17:10	2037-26-5	

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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-43 **Lab ID: 92572915003** Collected: 11/14/21 10:10 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 17:25	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 17:25	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 17:25	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 17:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 17:25	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 17:25	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 17:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 17:25	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 17:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 17:25	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 17:25	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 17:25	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 17:25	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 17:25	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 17:25	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 17:25	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 17:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 17:25	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 17:25	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:25	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:25	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:25	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 17:25	75-71-8	
1,1-Dichloroethane	**2.6**	ug/L	1.0	1		11/18/21 17:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 17:25	107-06-2	
1,1-Dichloroethene	**31.3**	ug/L	1.0	1		11/18/21 17:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:25	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:25	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:25	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:25	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:25	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 17:25	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 17:25	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 17:25	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 17:25	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 17:25	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 17:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 17:25	108-10-1	
Methyl-tert-butyl ether	**2.8**	ug/L	1.0	1		11/18/21 17:25	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 17:25	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 17:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 17:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 17:25	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-43 **Lab ID: 92572915003** Collected: 11/14/21 10:10 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 17:25	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 17:25	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:25	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:25	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 17:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 17:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 17:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 17:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 17:25	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 17:25	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 17:25	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 17:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 17:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 17:25	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	1		11/18/21 17:25	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130	1		11/18/21 17:25	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 17:25	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**34.3**	ug/L	2.0	1		11/17/21 20:04	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		11/17/21 20:04	17060-07-0	
Toluene-d8 (S)	101	%	66-133	1		11/17/21 20:04	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-39 **Lab ID: 92572915004** Collected: 11/14/21 10:25 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 17:43	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 17:43	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 17:43	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 17:43	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 17:43	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 17:43	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 17:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 17:43	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 17:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 17:43	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 17:43	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 17:43	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 17:43	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 17:43	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 17:43	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 17:43	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 17:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 17:43	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 17:43	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:43	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 17:43	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 17:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 17:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 17:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:43	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:43	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 17:43	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:43	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 17:43	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 17:43	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 17:43	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 17:43	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 17:43	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 17:43	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 17:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 17:43	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 17:43	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 17:43	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 17:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 17:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 17:43	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-39 **Lab ID: 92572915004** Collected: 11/14/21 10:25 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 17:43	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 17:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:43	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 17:43	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 17:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 17:43	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 17:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 17:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 17:43	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 17:43	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 17:43	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 17:43	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 17:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 17:43	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/18/21 17:43	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		11/18/21 17:43	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 17:43	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 20:39	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		11/17/21 20:39	17060-07-0	
Toluene-d8 (S)	89	%	66-133	1		11/17/21 20:39	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-38R **Lab ID: 92572915005** Collected: 11/14/21 10:35 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 18:01	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 18:01	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 18:01	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 18:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 18:01	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 18:01	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 18:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 18:01	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 18:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 18:01	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 18:01	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 18:01	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 18:01	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:01	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:01	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 18:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 18:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 18:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 18:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:01	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 18:01	75-71-8	
1,1-Dichloroethane	**6.7**	ug/L	1.0	1		11/18/21 18:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:01	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 18:01	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 18:01	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 18:01	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 18:01	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 18:01	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 18:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 18:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 18:01	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 18:01	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 18:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:01	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-38R **Lab ID: 92572915005** Collected: 11/14/21 10:35 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 18:01	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 18:01	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:01	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 18:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 18:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 18:01	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 18:01	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 18:01	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 18:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 18:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 18:01	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 18:01	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		11/18/21 18:01	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/18/21 18:01	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**46.2**	ug/L	2.0	1		11/17/21 20:23	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		11/17/21 20:23	17060-07-0	
Toluene-d8 (S)	101	%	66-133	1		11/17/21 20:23	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-42 **Lab ID: 92572915006** Collected: 11/14/21 10:50 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 18:19	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 18:19	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 18:19	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 18:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 18:19	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 18:19	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 18:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 18:19	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 18:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 18:19	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 18:19	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 18:19	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 18:19	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:19	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 18:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 18:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 18:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 18:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 18:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:19	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:19	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 18:19	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 18:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 18:19	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 18:19	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 18:19	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 18:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 18:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 18:19	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 18:19	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 18:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:19	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-42 **Lab ID: 92572915006** Collected: 11/14/21 10:50 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 18:19	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 18:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 18:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 18:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 18:19	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 18:19	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 18:19	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 18:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 18:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 18:19	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/18/21 18:19	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		11/18/21 18:19	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 18:19	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**12.5**	ug/L	2.0	1		11/17/21 20:58	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		11/17/21 20:58	17060-07-0	
Toluene-d8 (S)	89	%	66-133	1		11/17/21 20:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-18 **Lab ID: 92572915007** Collected: 11/14/21 11:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 18:37	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 18:37	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 18:37	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 18:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 18:37	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 18:37	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 18:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 18:37	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 18:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 18:37	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 18:37	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 18:37	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 18:37	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:37	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:37	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 18:37	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 18:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 18:37	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 18:37	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 18:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:37	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:37	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:37	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:37	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 18:37	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 18:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 18:37	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 18:37	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 18:37	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 18:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 18:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 18:37	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 18:37	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 18:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:37	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:37	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-18 **Lab ID: 92572915007** Collected: 11/14/21 11:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 18:37	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 18:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:37	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 18:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 18:37	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 18:37	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 18:37	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 18:37	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 18:37	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 18:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 18:37	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/18/21 18:37	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		11/18/21 18:37	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/18/21 18:37	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 21:17	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		11/17/21 21:17	17060-07-0	
Toluene-d8 (S)	88	%	66-133	1		11/17/21 21:17	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-40D **Lab ID: 92572915008** Collected: 11/14/21 11:15 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 18:55	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 18:55	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 18:55	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 18:55	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 18:55	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 18:55	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 18:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 18:55	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 18:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 18:55	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 18:55	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 18:55	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 18:55	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:55	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 18:55	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 18:55	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 18:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 18:55	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 18:55	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:55	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:55	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:55	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 18:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 18:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 18:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:55	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:55	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 18:55	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:55	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 18:55	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 18:55	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 18:55	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 18:55	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 18:55	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 18:55	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 18:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 18:55	108-10-1	
Methyl-tert-butyl ether	**1.7**	ug/L	1.0	1		11/18/21 18:55	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 18:55	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 18:55	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:55	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 18:55	79-34-5	

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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-40D **Lab ID: 92572915008** Collected: 11/14/21 11:15 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 18:55	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 18:55	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:55	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 18:55	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 18:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 18:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 18:55	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 18:55	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 18:55	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 18:55	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 18:55	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 18:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 18:55	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-130	1		11/18/21 18:55	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		11/18/21 18:55	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 18:55	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 21:36	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		11/17/21 21:36	17060-07-0	
Toluene-d8 (S)	88	%	66-133	1		11/17/21 21:36	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-5R **Lab ID: 92572915009** Collected: 11/14/21 11:25 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 19:13	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 19:13	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 19:13	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 19:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 19:13	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 19:13	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 19:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 19:13	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 19:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 19:13	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 19:13	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 19:13	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 19:13	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 19:13	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 19:13	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 19:13	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 19:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 19:13	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 19:13	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:13	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:13	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:13	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 19:13	75-71-8	
1,1-Dichloroethane	**1.6**	ug/L	1.0	1		11/18/21 19:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 19:13	107-06-2	
1,1-Dichloroethene	**1.4**	ug/L	1.0	1		11/18/21 19:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 19:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 19:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:13	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:13	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:13	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:13	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:13	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 19:13	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 19:13	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 19:13	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 19:13	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 19:13	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 19:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 19:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 19:13	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 19:13	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 19:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 19:13	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 19:13	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-5R **Lab ID: 92572915009** Collected: 11/14/21 11:25 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 19:13	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 19:13	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:13	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:13	120-82-1	
1,1,1-Trichloroethane	**2.4**	ug/L	1.0	1		11/18/21 19:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 19:13	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 19:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 19:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 19:13	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 19:13	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 19:13	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 19:13	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 19:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 19:13	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	1		11/18/21 19:13	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		11/18/21 19:13	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/18/21 19:13	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**12.0**	ug/L	2.0	1		11/17/21 21:55	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		11/17/21 21:55	17060-07-0	
Toluene-d8 (S)	87	%	66-133	1		11/17/21 21:55	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-44 **Lab ID: 92572915010** Collected: 11/14/21 11:40 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 19:31	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 19:31	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 19:31	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 19:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 19:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 19:31	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 19:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 19:31	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 19:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 19:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 19:31	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 19:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 19:31	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 19:31	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 19:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 19:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 19:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 19:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 19:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 19:31	75-71-8	
1,1-Dichloroethane	**3.8**	ug/L	1.0	1		11/18/21 19:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 19:31	107-06-2	
1,1-Dichloroethene	**7.2**	ug/L	1.0	1		11/18/21 19:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 19:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 19:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:31	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 19:31	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 19:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 19:31	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 19:31	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 19:31	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 19:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 19:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 19:31	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 19:31	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 19:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 19:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 19:31	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-44 **Lab ID: 92572915010** Collected: 11/14/21 11:40 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 19:31	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 19:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:31	120-82-1	
1,1,1-Trichloroethane	**15.4**	ug/L	1.0	1		11/18/21 19:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 19:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 19:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 19:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 19:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 19:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 19:31	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 19:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 19:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 19:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 19:31	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		11/18/21 19:31	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/18/21 19:31	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**13.3**	ug/L	2.0	1		11/17/21 20:43	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		11/17/21 20:43	17060-07-0	
Toluene-d8 (S)	101	%	66-133	1		11/17/21 20:43	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-21D **Lab ID: 92572915011** Collected: 11/14/21 11:55 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 19:49	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 19:49	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 19:49	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 19:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 19:49	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 19:49	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 19:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 19:49	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 19:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 19:49	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 19:49	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 19:49	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 19:49	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 19:49	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 19:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 19:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 19:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 19:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 19:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:49	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 19:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 19:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 19:49	107-06-2	
1,1-Dichloroethene	**18.7**	ug/L	1.0	1		11/18/21 19:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 19:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 19:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 19:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 19:49	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 19:49	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 19:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 19:49	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 19:49	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 19:49	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 19:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 19:49	108-10-1	
Methyl-tert-butyl ether	**3.6**	ug/L	1.0	1		11/18/21 19:49	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 19:49	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 19:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 19:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 19:49	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-21D **Lab ID: 92572915011** Collected: 11/14/21 11:55 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 19:49	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 19:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 19:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 19:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 19:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 19:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 19:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 19:49	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 19:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 19:49	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 19:49	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 19:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 19:49	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 19:49	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		11/18/21 19:49	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/18/21 19:49	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**12.9**	ug/L	2.0	1		11/17/21 22:14	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/17/21 22:14	17060-07-0	
Toluene-d8 (S)	89	%	66-133	1		11/17/21 22:14	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-41D **Lab ID: 92572915012** Collected: 11/14/21 13:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 20:07	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 20:07	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 20:07	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 20:07	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 20:07	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 20:07	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 20:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 20:07	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 20:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 20:07	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 20:07	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 20:07	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 20:07	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 20:07	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 20:07	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 20:07	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 20:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 20:07	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 20:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:07	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 20:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 20:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 20:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:07	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:07	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:07	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:07	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:07	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 20:07	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 20:07	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 20:07	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 20:07	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 20:07	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 20:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 20:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 20:07	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 20:07	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 20:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 20:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 20:07	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-41D **Lab ID: 92572915012** Collected: 11/14/21 13:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 20:07	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 20:07	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:07	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 20:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 20:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 20:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 20:07	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 20:07	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 20:07	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 20:07	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 20:07	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 20:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 20:07	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 20:07	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130	1		11/18/21 20:07	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 20:07	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 22:33	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/17/21 22:33	17060-07-0	
Toluene-d8 (S)	87	%	66-133	1		11/17/21 22:33	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-1 **Lab ID: 92572915013** Collected: 11/14/21 13:15 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 20:25	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 20:25	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 20:25	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 20:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 20:25	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 20:25	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 20:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 20:25	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 20:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 20:25	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 20:25	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 20:25	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 20:25	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 20:25	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 20:25	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 20:25	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 20:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 20:25	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 20:25	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:25	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:25	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:25	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 20:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 20:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 20:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:25	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:25	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:25	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:25	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:25	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 20:25	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 20:25	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 20:25	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 20:25	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 20:25	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 20:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 20:25	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 20:25	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 20:25	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 20:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 20:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 20:25	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-1 **Lab ID: 92572915013** Collected: 11/14/21 13:15 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 20:25	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 20:25	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:25	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:25	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 20:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 20:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 20:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 20:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 20:25	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 20:25	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 20:25	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 20:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 20:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 20:25	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 20:25	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		11/18/21 20:25	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/18/21 20:25	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 22:19	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		11/17/21 22:19	17060-07-0	
Toluene-d8 (S)	101	%	66-133	1		11/17/21 22:19	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-1D **Lab ID: 92572915014** Collected: 11/14/21 13:25 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 20:43	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 20:43	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 20:43	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 20:43	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 20:43	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 20:43	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 20:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 20:43	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 20:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 20:43	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 20:43	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 20:43	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 20:43	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 20:43	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 20:43	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 20:43	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 20:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 20:43	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 20:43	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:43	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 20:43	75-71-8	
1,1-Dichloroethane	**3.8**	ug/L	1.0	1		11/18/21 20:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 20:43	107-06-2	
1,1-Dichloroethene	**22.4**	ug/L	1.0	1		11/18/21 20:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 20:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:43	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:43	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 20:43	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:43	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 20:43	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 20:43	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 20:43	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 20:43	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 20:43	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 20:43	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 20:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 20:43	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 20:43	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 20:43	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 20:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 20:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 20:43	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-1D **Lab ID: 92572915014** Collected: 11/14/21 13:25 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 20:43	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 20:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:43	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 20:43	120-82-1	
1,1,1-Trichloroethane	**1.5**	ug/L	1.0	1		11/18/21 20:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 20:43	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 20:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 20:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 20:43	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 20:43	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 20:43	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 20:43	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 20:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 20:43	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-130	1		11/18/21 20:43	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		11/18/21 20:43	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 20:43	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**16.5**	ug/L	2.0	1		11/17/21 22:53	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		11/17/21 22:53	17060-07-0	
Toluene-d8 (S)	88	%	66-133	1		11/17/21 22:53	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-22D **Lab ID: 92572915015** Collected: 11/14/21 13:40 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 21:01	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 21:01	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 21:01	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 21:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 21:01	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 21:01	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 21:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 21:01	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 21:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 21:01	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 21:01	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 21:01	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 21:01	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 21:01	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 21:01	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 21:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 21:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 21:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 21:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:01	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 21:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 21:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 21:01	107-06-2	
1,1-Dichloroethene	**6.2**	ug/L	1.0	1		11/18/21 21:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 21:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 21:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 21:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 21:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 21:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 21:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 21:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 21:01	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 21:01	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 21:01	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 21:01	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 21:01	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 21:01	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 21:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 21:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 21:01	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 21:01	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 21:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 21:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 21:01	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-22D **Lab ID: 92572915015** Collected: 11/14/21 13:40 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 21:01	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 21:01	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:01	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 21:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 21:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 21:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 21:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 21:01	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 21:01	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 21:01	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 21:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 21:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 21:01	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/18/21 21:01	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		11/18/21 21:01	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/18/21 21:01	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**5.2**	ug/L	2.0	1		11/17/21 19:45	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		11/17/21 19:45	17060-07-0	
Toluene-d8 (S)	102	%	66-133	1		11/17/21 19:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-4 **Lab ID: 92572915016** Collected: 11/14/21 13:50 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/19/21 22:26	67-64-1	
Benzene	ND	ug/L	1.0	1		11/19/21 22:26	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/19/21 22:26	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/19/21 22:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/19/21 22:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/19/21 22:26	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/19/21 22:26	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/19/21 22:26	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/19/21 22:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/19/21 22:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/19/21 22:26	75-00-3	
Chloroform	**3.1**	ug/L	1.0	1		11/19/21 22:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/19/21 22:26	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 22:26	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 22:26	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/19/21 22:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/19/21 22:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/19/21 22:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/19/21 22:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:26	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/19/21 22:26	75-71-8	v1
1,1-Dichloroethane	**82.7**	ug/L	1.0	1		11/19/21 22:26	75-34-3	
1,2-Dichloroethane	**1.2**	ug/L	1.0	1		11/19/21 22:26	107-06-2	
1,1-Dichloroethene	**175**	ug/L	1.0	1		11/19/21 22:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 22:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 22:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 22:26	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/19/21 22:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 22:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/19/21 22:26	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 22:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 22:26	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/19/21 22:26	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/19/21 22:26	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/19/21 22:26	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/19/21 22:26	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/19/21 22:26	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/19/21 22:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/19/21 22:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/19/21 22:26	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/19/21 22:26	91-20-3	
Styrene	ND	ug/L	1.0	1		11/19/21 22:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 22:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 22:26	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-4 **Lab ID: 92572915016** Collected: 11/14/21 13:50 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/19/21 22:26	127-18-4	
Toluene	ND	ug/L	1.0	1		11/19/21 22:26	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:26	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/19/21 22:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/19/21 22:26	79-00-5	
Trichloroethene	**1.5**	ug/L	1.0	1		11/19/21 22:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/19/21 22:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/19/21 22:26	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/19/21 22:26	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/19/21 22:26	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/19/21 22:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/19/21 22:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/19/21 22:26	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/19/21 22:26	460-00-4	
1,2-Dichloroethane-d4 (S)	86	%	70-130	1		11/19/21 22:26	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		11/19/21 22:26	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**134**	ug/L	4.0	2		11/17/21 22:39	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	2		11/17/21 22:39	17060-07-0	
Toluene-d8 (S)	100	%	66-133	2		11/17/21 22:39	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-20 **Lab ID: 92572915017** Collected: 11/14/21 14:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		11/23/21 03:47	67-64-1	
Benzene	ND	ug/L	2.0	2		11/23/21 03:47	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		11/23/21 03:47	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		11/23/21 03:47	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		11/23/21 03:47	75-27-4	
Bromoform	ND	ug/L	2.0	2		11/23/21 03:47	75-25-2	
Bromomethane	ND	ug/L	4.0	2		11/23/21 03:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	2		11/23/21 03:47	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		11/23/21 03:47	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		11/23/21 03:47	108-90-7	
Chloroethane	ND	ug/L	2.0	2		11/23/21 03:47	75-00-3	v1
Chloroform	ND	ug/L	2.0	2		11/23/21 03:47	67-66-3	
Chloromethane	ND	ug/L	2.0	2		11/23/21 03:47	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		11/23/21 03:47	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		11/23/21 03:47	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		11/23/21 03:47	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		11/23/21 03:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		11/23/21 03:47	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		11/23/21 03:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		11/23/21 03:47	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		11/23/21 03:47	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		11/23/21 03:47	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		11/23/21 03:47	75-71-8	
1,1-Dichloroethane	**256**	ug/L	2.0	2		11/23/21 03:47	75-34-3	
1,2-Dichloroethane	**8.7**	ug/L	2.0	2		11/23/21 03:47	107-06-2	
1,1-Dichloroethene	**321**	ug/L	2.0	2		11/23/21 03:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		11/23/21 03:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		11/23/21 03:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		11/23/21 03:47	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		11/23/21 03:47	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		11/23/21 03:47	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		11/23/21 03:47	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		11/23/21 03:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		11/23/21 03:47	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		11/23/21 03:47	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		11/23/21 03:47	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		11/23/21 03:47	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		11/23/21 03:47	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		11/23/21 03:47	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		11/23/21 03:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		11/23/21 03:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		11/23/21 03:47	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		11/23/21 03:47	91-20-3	
Styrene	ND	ug/L	2.0	2		11/23/21 03:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		11/23/21 03:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		11/23/21 03:47	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-20 **Lab ID: 92572915017** Collected: 11/14/21 14:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.0	2		11/23/21 03:47	127-18-4	
Toluene	ND	ug/L	2.0	2		11/23/21 03:47	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		11/23/21 03:47	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		11/23/21 03:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	2		11/23/21 03:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		11/23/21 03:47	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		11/23/21 03:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		11/23/21 03:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		11/23/21 03:47	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		11/23/21 03:47	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		11/23/21 03:47	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		11/23/21 03:47	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		11/23/21 03:47	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		11/23/21 03:47	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	2		11/23/21 03:47	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	2		11/23/21 03:47	17060-07-0	
Toluene-d8 (S)	109	%	70-130	2		11/23/21 03:47	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**1210**	ug/L	40.0	20		11/17/21 22:58	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	70-130	20		11/17/21 22:58	17060-07-0	
Toluene-d8 (S)	102	%	66-133	20		11/17/21 22:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-9 **Lab ID: 92572915018** Collected: 11/14/21 14:15 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 21:19	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 21:19	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 21:19	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 21:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 21:19	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 21:19	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 21:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 21:19	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 21:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 21:19	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 21:19	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 21:19	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 21:19	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 21:19	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 21:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 21:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 21:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 21:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 21:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 21:19	75-71-8	
1,1-Dichloroethane	**2.5**	ug/L	1.0	1		11/18/21 21:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 21:19	107-06-2	
1,1-Dichloroethene	**53.3**	ug/L	1.0	1		11/18/21 21:19	75-35-4	M1
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 21:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 21:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 21:19	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 21:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 21:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 21:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 21:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 21:19	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 21:19	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 21:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 21:19	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 21:19	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 21:19	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 21:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 21:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 21:19	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 21:19	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 21:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 21:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 21:19	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-9 **Lab ID: 92572915018** Collected: 11/14/21 14:15 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 21:19	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 21:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 21:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 21:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 21:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 21:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 21:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 21:19	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 21:19	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 21:19	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 21:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 21:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 21:19	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/18/21 21:19	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		11/18/21 21:19	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/18/21 21:19	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**22.6**	ug/L	2.0	1		11/17/21 21:02	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		11/17/21 21:02	17060-07-0	
Toluene-d8 (S)	102	%	66-133	1		11/17/21 21:02	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-23D **Lab ID: 92572915019** Collected: 11/14/21 14:45 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/19/21 12:09	67-64-1	
Benzene	ND	ug/L	1.0	1		11/19/21 12:09	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/19/21 12:09	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/19/21 12:09	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/19/21 12:09	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/19/21 12:09	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/19/21 12:09	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/19/21 12:09	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/19/21 12:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/19/21 12:09	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/19/21 12:09	75-00-3	IK,IL
Chloroform	ND	ug/L	1.0	1		11/19/21 12:09	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/19/21 12:09	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 12:09	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 12:09	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/19/21 12:09	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/19/21 12:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/19/21 12:09	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/19/21 12:09	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:09	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:09	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:09	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/19/21 12:09	75-71-8	
1,1-Dichloroethane	**28.5**	ug/L	1.0	1		11/19/21 12:09	75-34-3	
1,2-Dichloroethane	**1.1**	ug/L	1.0	1		11/19/21 12:09	107-06-2	
1,1-Dichloroethene	**110**	ug/L	1.0	1		11/19/21 12:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 12:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 12:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 12:09	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/19/21 12:09	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 12:09	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/19/21 12:09	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 12:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 12:09	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/19/21 12:09	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/19/21 12:09	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/19/21 12:09	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/19/21 12:09	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/19/21 12:09	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/19/21 12:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/19/21 12:09	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/19/21 12:09	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/19/21 12:09	91-20-3	
Styrene	ND	ug/L	1.0	1		11/19/21 12:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 12:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 12:09	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-23D **Lab ID: 92572915019** Collected: 11/14/21 14:45 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/19/21 12:09	127-18-4	
Toluene	ND	ug/L	1.0	1		11/19/21 12:09	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:09	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:09	120-82-1	
1,1,1-Trichloroethane	**9.2**	ug/L	1.0	1		11/19/21 12:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/19/21 12:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/19/21 12:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/19/21 12:09	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/19/21 12:09	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/19/21 12:09	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/19/21 12:09	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/19/21 12:09	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/19/21 12:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/19/21 12:09	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		11/19/21 12:09	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		11/19/21 12:09	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/19/21 12:09	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**92.4**	ug/L	2.0	1		11/17/21 21:21	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		11/17/21 21:21	17060-07-0	
Toluene-d8 (S)	101	%	66-133	1		11/17/21 21:21	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: DUP-111421 **Lab ID: 92572915020** Collected: 11/14/21 12:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/19/21 22:44	67-64-1	
Benzene	ND	ug/L	1.0	1		11/19/21 22:44	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/19/21 22:44	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/19/21 22:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/19/21 22:44	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/19/21 22:44	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/19/21 22:44	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/19/21 22:44	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/19/21 22:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/19/21 22:44	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/19/21 22:44	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/19/21 22:44	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/19/21 22:44	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 22:44	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 22:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/19/21 22:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/19/21 22:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/19/21 22:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/19/21 22:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/19/21 22:44	75-71-8	v1
1,1-Dichloroethane	**17.0**	ug/L	1.0	1		11/19/21 22:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/19/21 22:44	107-06-2	
1,1-Dichloroethene	**67.2**	ug/L	1.0	1		11/19/21 22:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 22:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 22:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 22:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/19/21 22:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 22:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/19/21 22:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 22:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 22:44	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/19/21 22:44	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/19/21 22:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/19/21 22:44	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/19/21 22:44	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/19/21 22:44	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/19/21 22:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/19/21 22:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/19/21 22:44	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/19/21 22:44	91-20-3	
Styrene	ND	ug/L	1.0	1		11/19/21 22:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 22:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 22:44	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: DUP-111421 **Lab ID: 92572915020** Collected: 11/14/21 12:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/19/21 22:44	127-18-4	
Toluene	ND	ug/L	1.0	1		11/19/21 22:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 22:44	120-82-1	
1,1,1-Trichloroethane	**5.3**	ug/L	1.0	1		11/19/21 22:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/19/21 22:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/19/21 22:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/19/21 22:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/19/21 22:44	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/19/21 22:44	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/19/21 22:44	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/19/21 22:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/19/21 22:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/19/21 22:44	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/19/21 22:44	460-00-4	
1,2-Dichloroethane-d4 (S)	86	%	70-130	1		11/19/21 22:44	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/19/21 22:44	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**84.2**	ug/L	2.0	1		11/18/21 18:26	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		11/18/21 18:26	17060-07-0	
Toluene-d8 (S)	87	%	66-133	1		11/18/21 18:26	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-16 **Lab ID: 92572915021** Collected: 11/14/21 15:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	312	12.5		11/23/21 19:08	67-64-1	
Benzene	ND	ug/L	12.5	12.5		11/23/21 19:08	71-43-2	
Bromobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	108-86-1	
Bromochloromethane	ND	ug/L	12.5	12.5		11/23/21 19:08	74-97-5	
Bromodichloromethane	ND	ug/L	12.5	12.5		11/23/21 19:08	75-27-4	
Bromoform	ND	ug/L	12.5	12.5		11/23/21 19:08	75-25-2	
Bromomethane	ND	ug/L	25.0	12.5		11/23/21 19:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	62.5	12.5		11/23/21 19:08	78-93-3	
Carbon tetrachloride	ND	ug/L	12.5	12.5		11/23/21 19:08	56-23-5	
Chlorobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	108-90-7	
Chloroethane	ND	ug/L	12.5	12.5		11/23/21 19:08	75-00-3	
Chloroform	ND	ug/L	12.5	12.5		11/23/21 19:08	67-66-3	
Chloromethane	ND	ug/L	12.5	12.5		11/23/21 19:08	74-87-3	
2-Chlorotoluene	ND	ug/L	12.5	12.5		11/23/21 19:08	95-49-8	
4-Chlorotoluene	ND	ug/L	12.5	12.5		11/23/21 19:08	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	25.0	12.5		11/23/21 19:08	96-12-8	
Dibromochloromethane	ND	ug/L	12.5	12.5		11/23/21 19:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	12.5	12.5		11/23/21 19:08	106-93-4	
Dibromomethane	ND	ug/L	12.5	12.5		11/23/21 19:08	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	12.5	12.5		11/23/21 19:08	75-71-8	
1,1-Dichloroethane	**1350**	ug/L	12.5	12.5		11/23/21 19:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	12.5	12.5		11/23/21 19:08	107-06-2	
1,1-Dichloroethene	**1630**	ug/L	12.5	12.5		11/23/21 19:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	12.5	12.5		11/23/21 19:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	12.5	12.5		11/23/21 19:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	12.5	12.5		11/23/21 19:08	78-87-5	
1,3-Dichloropropane	ND	ug/L	12.5	12.5		11/23/21 19:08	142-28-9	
2,2-Dichloropropane	ND	ug/L	12.5	12.5		11/23/21 19:08	594-20-7	
1,1-Dichloropropene	ND	ug/L	12.5	12.5		11/23/21 19:08	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	12.5	12.5		11/23/21 19:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	12.5	12.5		11/23/21 19:08	10061-02-6	
Diisopropyl ether	ND	ug/L	12.5	12.5		11/23/21 19:08	108-20-3	
Ethylbenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	12.5		11/23/21 19:08	87-68-3	
2-Hexanone	ND	ug/L	62.5	12.5		11/23/21 19:08	591-78-6	
p-Isopropyltoluene	ND	ug/L	12.5	12.5		11/23/21 19:08	99-87-6	
Methylene Chloride	ND	ug/L	62.5	12.5		11/23/21 19:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	62.5	12.5		11/23/21 19:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	12.5	12.5		11/23/21 19:08	1634-04-4	
Naphthalene	ND	ug/L	12.5	12.5		11/23/21 19:08	91-20-3	
Styrene	ND	ug/L	12.5	12.5		11/23/21 19:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	12.5	12.5		11/23/21 19:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	12.5	12.5		11/23/21 19:08	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-16 **Lab ID: 92572915021** Collected: 11/14/21 15:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	12.5	12.5		11/23/21 19:08	127-18-4	
Toluene	ND	ug/L	12.5	12.5		11/23/21 19:08	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	12.5	12.5		11/23/21 19:08	120-82-1	
1,1,1-Trichloroethane	**1720**	ug/L	12.5	12.5		11/23/21 19:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	12.5	12.5		11/23/21 19:08	79-00-5	
Trichloroethene	ND	ug/L	12.5	12.5		11/23/21 19:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	12.5	12.5		11/23/21 19:08	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	12.5	12.5		11/23/21 19:08	96-18-4	
Vinyl acetate	ND	ug/L	25.0	12.5		11/23/21 19:08	108-05-4	
Vinyl chloride	ND	ug/L	12.5	12.5		11/23/21 19:08	75-01-4	
Xylene (Total)	ND	ug/L	12.5	12.5		11/23/21 19:08	1330-20-7	
m&p-Xylene	ND	ug/L	25.0	12.5		11/23/21 19:08	179601-23-1	
o-Xylene	ND	ug/L	12.5	12.5		11/23/21 19:08	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	12.5		11/23/21 19:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	12.5		11/23/21 19:08	17060-07-0	
Toluene-d8 (S)	106	%	70-130	12.5		11/23/21 19:08	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**76.0**	ug/L	2.0	1		11/18/21 18:45	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/18/21 18:45	17060-07-0	
Toluene-d8 (S)	84	%	66-133	1		11/18/21 18:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-16D **Lab ID: 92572915022** Collected: 11/14/21 15:10 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/19/21 12:27	67-64-1	
Benzene	ND	ug/L	1.0	1		11/19/21 12:27	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/19/21 12:27	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/19/21 12:27	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/19/21 12:27	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/19/21 12:27	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/19/21 12:27	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/19/21 12:27	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/19/21 12:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/19/21 12:27	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/19/21 12:27	75-00-3	IK,IL
Chloroform	ND	ug/L	1.0	1		11/19/21 12:27	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/19/21 12:27	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 12:27	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/19/21 12:27	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/19/21 12:27	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/19/21 12:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/19/21 12:27	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/19/21 12:27	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:27	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:27	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/19/21 12:27	75-71-8	
1,1-Dichloroethane	**21.5**	ug/L	1.0	1		11/19/21 12:27	75-34-3	
1,2-Dichloroethane	**1.1**	ug/L	1.0	1		11/19/21 12:27	107-06-2	
1,1-Dichloroethene	**98.7**	ug/L	1.0	1		11/19/21 12:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 12:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/19/21 12:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 12:27	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/19/21 12:27	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/19/21 12:27	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/19/21 12:27	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 12:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/19/21 12:27	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/19/21 12:27	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/19/21 12:27	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/19/21 12:27	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/19/21 12:27	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/19/21 12:27	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/19/21 12:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/19/21 12:27	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/19/21 12:27	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/19/21 12:27	91-20-3	
Styrene	ND	ug/L	1.0	1		11/19/21 12:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 12:27	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/19/21 12:27	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: MW-16D **Lab ID: 92572915022** Collected: 11/14/21 15:10 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/19/21 12:27	127-18-4	
Toluene	ND	ug/L	1.0	1		11/19/21 12:27	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:27	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/19/21 12:27	120-82-1	
1,1,1-Trichloroethane	**6.9**	ug/L	1.0	1		11/19/21 12:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/19/21 12:27	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/19/21 12:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/19/21 12:27	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/19/21 12:27	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/19/21 12:27	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/19/21 12:27	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/19/21 12:27	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/19/21 12:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/19/21 12:27	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		11/19/21 12:27	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		11/19/21 12:27	17060-07-0	
Toluene-d8 (S)	104	%	70-130	1		11/19/21 12:27	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**84.5**	ug/L	2.0	1		11/18/21 19:05	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		11/18/21 19:05	17060-07-0	
Toluene-d8 (S)	84	%	66-133	1		11/18/21 19:05	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: TRIP BLANK **Lab ID: 92572915023** Collected: 11/14/21 00:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		11/18/21 16:31	67-64-1	
Benzene	ND	ug/L	1.0	1		11/18/21 16:31	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/18/21 16:31	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/18/21 16:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/18/21 16:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/18/21 16:31	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1		11/18/21 16:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/18/21 16:31	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/18/21 16:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/18/21 16:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/18/21 16:31	75-00-3	IK,v1
Chloroform	ND	ug/L	1.0	1		11/18/21 16:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/18/21 16:31	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 16:31	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/18/21 16:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		11/18/21 16:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/18/21 16:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/18/21 16:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/18/21 16:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/18/21 16:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/18/21 16:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/18/21 16:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/18/21 16:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 16:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/18/21 16:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 16:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/18/21 16:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/18/21 16:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/18/21 16:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 16:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/18/21 16:31	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/18/21 16:31	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/18/21 16:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		11/18/21 16:31	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/18/21 16:31	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/18/21 16:31	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/18/21 16:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/18/21 16:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/18/21 16:31	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/18/21 16:31	91-20-3	
Styrene	ND	ug/L	1.0	1		11/18/21 16:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 16:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/18/21 16:31	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Sample: TRIP BLANK **Lab ID: 92572915023** Collected: 11/14/21 00:00 Received: 11/17/21 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		11/18/21 16:31	127-18-4	
Toluene	ND	ug/L	1.0	1		11/18/21 16:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/18/21 16:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/18/21 16:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/18/21 16:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/18/21 16:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/18/21 16:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/18/21 16:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/18/21 16:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/18/21 16:31	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/18/21 16:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/18/21 16:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/18/21 16:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/18/21 16:31	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		11/18/21 16:31	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		11/18/21 16:31	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/17/21 23:12	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		11/17/21 23:12	17060-07-0	
Toluene-d8 (S)	89	%	66-133	1		11/17/21 23:12	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 660595 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915001, 92572915002, 92572915003, 92572915004, 92572915005, 92572915006, 92572915007, 92572915008, 92572915009, 92572915010, 92572915011, 92572915012, 92572915013, 92572915014, 92572915015, 92572915018, 92572915023

METHOD BLANK: 3461382 Matrix: Water
Associated Lab Samples: 92572915001, 92572915002, 92572915003, 92572915004, 92572915005, 92572915006, 92572915007, 92572915008, 92572915009, 92572915010, 92572915011, 92572915012, 92572915013, 92572915014, 92572915015, 92572915018, 92572915023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/18/21 16:13	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/18/21 16:13	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/18/21 16:13	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/18/21 16:13	
1,1-Dichloroethane	ug/L	ND	1.0	11/18/21 16:13	
1,1-Dichloroethene	ug/L	ND	1.0	11/18/21 16:13	
1,1-Dichloropropene	ug/L	ND	1.0	11/18/21 16:13	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/18/21 16:13	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/18/21 16:13	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/18/21 16:13	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	11/18/21 16:13	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/18/21 16:13	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/18/21 16:13	
1,2-Dichloroethane	ug/L	ND	1.0	11/18/21 16:13	
1,2-Dichloropropane	ug/L	ND	1.0	11/18/21 16:13	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/18/21 16:13	
1,3-Dichloropropane	ug/L	ND	1.0	11/18/21 16:13	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/18/21 16:13	
2,2-Dichloropropane	ug/L	ND	1.0	11/18/21 16:13	
2-Butanone (MEK)	ug/L	ND	5.0	11/18/21 16:13	
2-Chlorotoluene	ug/L	ND	1.0	11/18/21 16:13	
2-Hexanone	ug/L	ND	5.0	11/18/21 16:13	
4-Chlorotoluene	ug/L	ND	1.0	11/18/21 16:13	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/18/21 16:13	
Acetone	ug/L	ND	25.0	11/18/21 16:13	
Benzene	ug/L	ND	1.0	11/18/21 16:13	
Bromobenzene	ug/L	ND	1.0	11/18/21 16:13	
Bromochloromethane	ug/L	ND	1.0	11/18/21 16:13	
Bromodichloromethane	ug/L	ND	1.0	11/18/21 16:13	
Bromoform	ug/L	ND	1.0	11/18/21 16:13	IK
Bromomethane	ug/L	ND	2.0	11/18/21 16:13	
Carbon tetrachloride	ug/L	ND	1.0	11/18/21 16:13	
Chlorobenzene	ug/L	ND	1.0	11/18/21 16:13	
Chloroethane	ug/L	ND	1.0	11/18/21 16:13	IK,v1
Chloroform	ug/L	ND	1.0	11/18/21 16:13	
Chloromethane	ug/L	ND	1.0	11/18/21 16:13	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/18/21 16:13	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

METHOD BLANK: 3461382 Matrix: Water

Associated Lab Samples: 92572915001, 92572915002, 92572915003, 92572915004, 92572915005, 92572915006, 92572915007, 92572915008, 92572915009, 92572915010, 92572915011, 92572915012, 92572915013, 92572915014, 92572915015, 92572915018, 92572915023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/18/21 16:13	
Dibromochloromethane	ug/L	ND	1.0	11/18/21 16:13	
Dibromomethane	ug/L	ND	1.0	11/18/21 16:13	
Dichlorodifluoromethane	ug/L	ND	1.0	11/18/21 16:13	
Diisopropyl ether	ug/L	ND	1.0	11/18/21 16:13	
Ethylbenzene	ug/L	ND	1.0	11/18/21 16:13	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	11/18/21 16:13	
m&p-Xylene	ug/L	ND	2.0	11/18/21 16:13	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/18/21 16:13	
Methylene Chloride	ug/L	ND	5.0	11/18/21 16:13	
Naphthalene	ug/L	ND	1.0	11/18/21 16:13	
o-Xylene	ug/L	ND	1.0	11/18/21 16:13	
p-Isopropyltoluene	ug/L	ND	1.0	11/18/21 16:13	
Styrene	ug/L	ND	1.0	11/18/21 16:13	
Tetrachloroethene	ug/L	ND	1.0	11/18/21 16:13	
Toluene	ug/L	ND	1.0	11/18/21 16:13	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/18/21 16:13	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/18/21 16:13	
Trichloroethene	ug/L	ND	1.0	11/18/21 16:13	
Trichlorofluoromethane	ug/L	ND	1.0	11/18/21 16:13	
Vinyl acetate	ug/L	ND	2.0	11/18/21 16:13	
Vinyl chloride	ug/L	ND	1.0	11/18/21 16:13	
Xylene (Total)	ug/L	ND	1.0	11/18/21 16:13	
1,2-Dichloroethane-d4 (S)	%	105	70-130	11/18/21 16:13	
4-Bromofluorobenzene (S)	%	96	70-130	11/18/21 16:13	
Toluene-d8 (S)	%	102	70-130	11/18/21 16:13	

LABORATORY CONTROL SAMPLE: 3461383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	55.3	111	70-130	
1,1,1-Trichloroethane	ug/L	50	54.4	109	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.1	102	70-130	
1,1,2-Trichloroethane	ug/L	50	53.2	106	70-130	
1,1-Dichloroethane	ug/L	50	54.3	109	70-130	
1,1-Dichloroethene	ug/L	50	55.9	112	70-132	
1,1-Dichloropropene	ug/L	50	53.6	107	70-131	
1,2,3-Trichlorobenzene	ug/L	50	55.0	110	70-134	
1,2,3-Trichloropropane	ug/L	50	47.8	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	54.4	109	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	55.9	112	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	54.9	110	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

LABORATORY CONTROL SAMPLE: 3461383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichlorobenzene	ug/L	50	53.8	108	70-130	
1,2-Dichloroethane	ug/L	50	50.2	100	70-130	
1,2-Dichloropropane	ug/L	50	53.0	106	70-130	
1,3-Dichlorobenzene	ug/L	50	53.9	108	70-130	
1,3-Dichloropropane	ug/L	50	51.7	103	70-130	
1,4-Dichlorobenzene	ug/L	50	53.5	107	70-130	
2,2-Dichloropropane	ug/L	50	56.3	113	70-130	
2-Butanone (MEK)	ug/L	100	91.3	91	70-133	
2-Chlorotoluene	ug/L	50	54.3	109	70-130	
2-Hexanone	ug/L	100	103	103	70-130	
4-Chlorotoluene	ug/L	50	53.3	107	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.0	98	70-130	
Acetone	ug/L	100	98.5	98	70-144	
Benzene	ug/L	50	52.9	106	70-130	
Bromobenzene	ug/L	50	54.1	108	70-130	
Bromochloromethane	ug/L	50	54.2	108	70-130	
Bromodichloromethane	ug/L	50	56.1	112	70-130	
Bromoform	ug/L	50	47.9	96	70-131	IK
Bromomethane	ug/L	50	50.5	101	30-177	
Carbon tetrachloride	ug/L	50	56.0	112	70-130	
Chlorobenzene	ug/L	50	53.9	108	70-130	
Chloroethane	ug/L	50	62.9	126	46-131	IK,v1
Chloroform	ug/L	50	52.9	106	70-130	
Chloromethane	ug/L	50	53.4	107	49-130	
cis-1,2-Dichloroethene	ug/L	50	53.2	106	70-130	
cis-1,3-Dichloropropene	ug/L	50	55.5	111	70-130	
Dibromochloromethane	ug/L	50	58.9	118	70-130	
Dibromomethane	ug/L	50	53.3	107	70-130	
Dichlorodifluoromethane	ug/L	50	50.8	102	52-134	
Diisopropyl ether	ug/L	50	50.0	100	70-131	
Ethylbenzene	ug/L	50	52.9	106	70-130	
Hexachloro-1,3-butadiene	ug/L	50	57.6	115	70-131	
m&p-Xylene	ug/L	100	108	108	70-130	
Methyl-tert-butyl ether	ug/L	50	49.9	100	70-130	
Methylene Chloride	ug/L	50	49.8	100	68-130	
Naphthalene	ug/L	50	54.4	109	70-133	
o-Xylene	ug/L	50	54.3	109	70-130	
p-Isopropyltoluene	ug/L	50	54.7	109	70-130	
Styrene	ug/L	50	56.2	112	70-130	
Tetrachloroethene	ug/L	50	54.3	109	70-130	
Toluene	ug/L	50	51.5	103	70-130	
trans-1,2-Dichloroethene	ug/L	50	55.8	112	70-130	
trans-1,3-Dichloropropene	ug/L	50	54.7	109	70-130	
Trichloroethene	ug/L	50	53.3	107	70-130	
Trichlorofluoromethane	ug/L	50	52.8	106	61-130	
Vinyl acetate	ug/L	100	109	109	70-140	
Vinyl chloride	ug/L	50	53.8	108	59-142	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

LABORATORY CONTROL SAMPLE: 3461383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	162	108	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461384 3461385

Parameter	Units	92572915018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	23.2	23.5	116	118	70-135	1	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	23.6	25.0	118	125	70-148	6	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	21.9	22.1	110	110	70-131	1	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.1	24.4	110	122	70-136	10	30	
1,1-Dichloroethane	ug/L	2.5	20	20	26.7	28.1	121	128	70-147	5	30	
1,1-Dichloroethene	ug/L	53.3	20	20	75.6	99.5	111	231	70-158	27	30	M1
1,1-Dichloropropene	ug/L	ND	20	20	24.6	24.9	123	125	70-149	1	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.2	22.4	111	112	68-140	1	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	19.9	21.9	99	109	67-137	9	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.0	22.4	105	112	70-139	7	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	22.2	22.8	111	114	69-136	3	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	22.8	23.2	114	116	70-137	2	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.3	21.5	102	107	70-133	6	30	
1,2-Dichloroethane	ug/L	ND	20	20	22.7	24.4	113	122	67-138	7	30	
1,2-Dichloropropane	ug/L	ND	20	20	22.9	24.4	115	122	70-138	7	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	21.2	21.8	106	109	70-133	3	30	
1,3-Dichloropropane	ug/L	ND	20	20	22.4	22.7	112	113	70-136	1	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.4	21.7	102	109	70-133	6	30	
2,2-Dichloropropane	ug/L	ND	20	20	24.7	25.1	123	125	52-155	2	30	
2-Butanone (MEK)	ug/L	ND	40	40	46.1	46.4	115	116	61-147	1	30	
2-Chlorotoluene	ug/L	ND	20	20	22.4	22.5	112	112	70-141	0	30	
2-Hexanone	ug/L	ND	40	40	45.2	45.3	113	113	67-139	0	30	
4-Chlorotoluene	ug/L	ND	20	20	21.0	21.3	105	106	70-135	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	45.0	44.8	112	112	67-136	0	30	
Acetone	ug/L	ND	40	40	42.0	43.1	105	108	55-159	2	30	
Benzene	ug/L	ND	20	20	23.3	23.7	117	118	67-150	1	30	
Bromobenzene	ug/L	ND	20	20	21.7	22.5	108	112	70-134	4	30	
Bromochloromethane	ug/L	ND	20	20	22.8	23.6	114	118	70-146	4	30	
Bromodichloromethane	ug/L	ND	20	20	23.9	24.5	120	123	70-138	3	30	
Bromoform	ug/L	ND	20	20	20.2	20.1	101	100	57-138	0	30	IK
Bromomethane	ug/L	ND	20	20	25.5	27.2	127	136	10-200	6	30	
Carbon tetrachloride	ug/L	ND	20	20	24.4	25.2	122	126	70-147	3	30	
Chlorobenzene	ug/L	ND	20	20	22.7	23.1	113	116	70-137	2	30	
Chloroethane	ug/L	ND	20	20	30.9	30.1	155	150	51-166	3	30	IK
Chloroform	ug/L	ND	20	20	24.5	25.1	119	122	70-144	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461384 3461385

Parameter	Units	92572915018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloromethane	ug/L	ND	20	20	23.1	23.6	116	118	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	23.9	24.8	119	124	67-148	4	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	22.7	24.1	113	121	70-142	6	30	
Dibromochloromethane	ug/L	ND	20	20	22.7	23.9	113	120	68-138	6	30	
Dibromomethane	ug/L	ND	20	20	22.9	22.6	115	113	70-134	2	30	
Dichlorodifluoromethane	ug/L	ND	20	20	21.3	21.4	106	107	43-155	1	30	
Diisopropyl ether	ug/L	ND	20	20	22.9	23.3	114	116	65-146	2	30	
Ethylbenzene	ug/L	ND	20	20	22.3	22.7	112	113	68-143	2	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.2	23.6	116	118	62-151	2	30	
m&p-Xylene	ug/L	ND	40	40	44.0	45.8	110	114	53-157	4	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	22.9	22.7	114	114	59-156	1	30	
Methylene Chloride	ug/L	ND	20	20	22.3	22.4	111	112	64-148	1	30	
Naphthalene	ug/L	ND	20	20	21.1	21.4	106	107	57-150	1	30	
o-Xylene	ug/L	ND	20	20	22.4	23.1	112	116	68-143	3	30	
p-Isopropyltoluene	ug/L	ND	20	20	22.0	22.4	110	112	70-141	2	30	
Styrene	ug/L	ND	20	20	21.5	22.4	108	112	70-136	4	30	
Tetrachloroethene	ug/L	ND	20	20	22.7	23.4	113	117	70-139	3	30	
Toluene	ug/L	ND	20	20	21.7	22.7	108	114	47-157	5	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	24.3	25.4	121	127	70-149	5	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	22.1	22.9	110	115	70-138	4	30	
Trichloroethene	ug/L	ND	20	20	23.6	24.4	118	122	70-149	3	30	
Trichlorofluoromethane	ug/L	ND	20	20	22.0	21.3	110	106	61-154	3	30	
Vinyl acetate	ug/L	ND	40	40	46.5	47.3	116	118	48-156	2	30	
Vinyl chloride	ug/L	ND	20	20	23.4	23.4	117	117	55-172	0	30	
Xylene (Total)	ug/L	ND	60	60	66.4	68.9	111	115	66-145	4	30	
1,2-Dichloroethane-d4 (S)	%						101	101	70-130			
4-Bromofluorobenzene (S)	%						99	99	70-130			
Toluene-d8 (S)	%						100	103	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 660597
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915019, 92572915022

METHOD BLANK: 3461390 Matrix: Water
Associated Lab Samples: 92572915019, 92572915022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/19/21 07:53	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/19/21 07:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/19/21 07:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/19/21 07:53	
1,1-Dichloroethane	ug/L	ND	1.0	11/19/21 07:53	
1,1-Dichloroethene	ug/L	ND	1.0	11/19/21 07:53	
1,1-Dichloropropene	ug/L	ND	1.0	11/19/21 07:53	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/19/21 07:53	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/19/21 07:53	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/19/21 07:53	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	11/19/21 07:53	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/19/21 07:53	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/19/21 07:53	
1,2-Dichloroethane	ug/L	ND	1.0	11/19/21 07:53	
1,2-Dichloropropane	ug/L	ND	1.0	11/19/21 07:53	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/19/21 07:53	
1,3-Dichloropropane	ug/L	ND	1.0	11/19/21 07:53	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/19/21 07:53	
2,2-Dichloropropane	ug/L	ND	1.0	11/19/21 07:53	
2-Butanone (MEK)	ug/L	ND	5.0	11/19/21 07:53	
2-Chlorotoluene	ug/L	ND	1.0	11/19/21 07:53	
2-Hexanone	ug/L	ND	5.0	11/19/21 07:53	
4-Chlorotoluene	ug/L	ND	1.0	11/19/21 07:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/19/21 07:53	
Acetone	ug/L	ND	25.0	11/19/21 07:53	
Benzene	ug/L	ND	1.0	11/19/21 07:53	
Bromobenzene	ug/L	ND	1.0	11/19/21 07:53	
Bromochloromethane	ug/L	ND	1.0	11/19/21 07:53	
Bromodichloromethane	ug/L	ND	1.0	11/19/21 07:53	
Bromoform	ug/L	ND	1.0	11/19/21 07:53	
Bromomethane	ug/L	ND	2.0	11/19/21 07:53	v2
Carbon tetrachloride	ug/L	ND	1.0	11/19/21 07:53	
Chlorobenzene	ug/L	ND	1.0	11/19/21 07:53	
Chloroethane	ug/L	ND	1.0	11/19/21 07:53	IK,IL
Chloroform	ug/L	ND	1.0	11/19/21 07:53	
Chloromethane	ug/L	ND	1.0	11/19/21 07:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/19/21 07:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/19/21 07:53	
Dibromochloromethane	ug/L	ND	1.0	11/19/21 07:53	
Dibromomethane	ug/L	ND	1.0	11/19/21 07:53	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

METHOD BLANK: 3461390 Matrix: Water
Associated Lab Samples: 92572915019, 92572915022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/19/21 07:53	
Diisopropyl ether	ug/L	ND	1.0	11/19/21 07:53	
Ethylbenzene	ug/L	ND	1.0	11/19/21 07:53	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	11/19/21 07:53	
m&p-Xylene	ug/L	ND	2.0	11/19/21 07:53	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/19/21 07:53	
Methylene Chloride	ug/L	ND	5.0	11/19/21 07:53	
Naphthalene	ug/L	ND	1.0	11/19/21 07:53	
o-Xylene	ug/L	ND	1.0	11/19/21 07:53	
p-Isopropyltoluene	ug/L	ND	1.0	11/19/21 07:53	
Styrene	ug/L	ND	1.0	11/19/21 07:53	
Tetrachloroethene	ug/L	ND	1.0	11/19/21 07:53	
Toluene	ug/L	ND	1.0	11/19/21 07:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/19/21 07:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/19/21 07:53	
Trichloroethene	ug/L	ND	1.0	11/19/21 07:53	
Trichlorofluoromethane	ug/L	ND	1.0	11/19/21 07:53	
Vinyl acetate	ug/L	ND	2.0	11/19/21 07:53	
Vinyl chloride	ug/L	ND	1.0	11/19/21 07:53	
Xylene (Total)	ug/L	ND	1.0	11/19/21 07:53	
1,2-Dichloroethane-d4 (S)	%	99	70-130	11/19/21 07:53	
4-Bromofluorobenzene (S)	%	100	70-130	11/19/21 07:53	
Toluene-d8 (S)	%	103	70-130	11/19/21 07:53	

LABORATORY CONTROL SAMPLE: 3461391

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.1	98	70-130	
1,1,1-Trichloroethane	ug/L	50	46.6	93	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	48.8	98	70-130	
1,1,2-Trichloroethane	ug/L	50	47.7	95	70-130	
1,1-Dichloroethane	ug/L	50	46.8	94	70-130	
1,1-Dichloroethene	ug/L	50	47.4	95	70-132	
1,1-Dichloropropene	ug/L	50	46.1	92	70-131	
1,2,3-Trichlorobenzene	ug/L	50	52.8	106	70-134	
1,2,3-Trichloropropane	ug/L	50	48.2	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	51.2	102	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	51.7	103	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	50.1	100	70-130	
1,2-Dichlorobenzene	ug/L	50	48.2	96	70-130	
1,2-Dichloroethane	ug/L	50	44.9	90	70-130	
1,2-Dichloropropane	ug/L	50	47.4	95	70-130	
1,3-Dichlorobenzene	ug/L	50	48.7	97	70-130	
1,3-Dichloropropane	ug/L	50	48.1	96	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

LABORATORY CONTROL SAMPLE: 3461391

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	49.1	98	70-130	
2,2-Dichloropropane	ug/L	50	51.4	103	70-130	
2-Butanone (MEK)	ug/L	100	93.3	93	70-133	
2-Chlorotoluene	ug/L	50	47.9	96	70-130	
2-Hexanone	ug/L	100	98.9	99	70-130	
4-Chlorotoluene	ug/L	50	47.0	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	94.5	94	70-130	
Acetone	ug/L	100	93.4	93	70-144	
Benzene	ug/L	50	47.1	94	70-130	
Bromobenzene	ug/L	50	48.6	97	70-130	
Bromochloromethane	ug/L	50	48.8	98	70-130	
Bromodichloromethane	ug/L	50	47.5	95	70-130	
Bromoform	ug/L	50	49.9	100	70-131	
Bromomethane	ug/L	50	46.8	94	30-177	v3
Carbon tetrachloride	ug/L	50	47.8	96	70-130	
Chlorobenzene	ug/L	50	48.5	97	70-130	
Chloroethane	ug/L	50	30.3	61	46-131	IK,IL
Chloroform	ug/L	50	47.4	95	70-130	
Chloromethane	ug/L	50	40.8	82	49-130	
cis-1,2-Dichloroethene	ug/L	50	46.7	93	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.1	98	70-130	
Dibromochloromethane	ug/L	50	50.2	100	70-130	
Dibromomethane	ug/L	50	48.5	97	70-130	
Dichlorodifluoromethane	ug/L	50	43.1	86	52-134	
Diisopropyl ether	ug/L	50	45.2	90	70-131	
Ethylbenzene	ug/L	50	48.6	97	70-130	
Hexachloro-1,3-butadiene	ug/L	50	52.2	104	70-131	
m&p-Xylene	ug/L	100	98.8	99	70-130	
Methyl-tert-butyl ether	ug/L	50	46.3	93	70-130	
Methylene Chloride	ug/L	50	43.6	87	68-130	
Naphthalene	ug/L	50	52.6	105	70-133	
o-Xylene	ug/L	50	49.2	98	70-130	
p-Isopropyltoluene	ug/L	50	49.5	99	70-130	
Styrene	ug/L	50	50.3	101	70-130	
Tetrachloroethene	ug/L	50	46.2	92	70-130	
Toluene	ug/L	50	46.5	93	70-130	
trans-1,2-Dichloroethene	ug/L	50	47.9	96	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.9	98	70-130	
Trichloroethene	ug/L	50	47.2	94	70-130	
Trichlorofluoromethane	ug/L	50	40.3	81	61-130	
Vinyl acetate	ug/L	100	108	108	70-140	
Vinyl chloride	ug/L	50	45.4	91	59-142	
Xylene (Total)	ug/L	150	148	99	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			97	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461392 3461393

Parameter	Units	92572910001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.9	20.9	109	104	70-135	5	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.3	22.0	111	110	70-148	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	22.7	21.3	113	107	70-131	6	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.3	21.5	111	107	70-136	4	30	
1,1-Dichloroethane	ug/L	ND	20	20	22.7	22.4	114	112	70-147	2	30	
1,1-Dichloroethene	ug/L	8.1	20	20	29.0	31.4	104	116	70-158	8	30	
1,1-Dichloropropene	ug/L	ND	20	20	22.4	21.9	112	109	70-149	2	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	23.1	22.7	116	113	68-140	2	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	22.5	21.7	112	109	67-137	3	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.9	22.2	115	111	70-139	3	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	22.1	21.4	110	107	69-136	3	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	22.7	21.5	113	107	70-137	5	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	22.5	21.5	113	108	70-133	5	30	
1,2-Dichloroethane	ug/L	ND	20	20	21.2	20.2	106	101	67-138	5	30	
1,2-Dichloropropane	ug/L	ND	20	20	22.4	21.9	112	110	70-138	2	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	23.1	21.4	115	107	70-133	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	22.6	21.7	113	108	70-136	4	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	23.2	22.1	116	110	70-133	5	30	
2,2-Dichloropropane	ug/L	ND	20	20	27.8	27.6	139	138	52-155	1	30	
2-Butanone (MEK)	ug/L	ND	40	40	44.2	42.6	111	107	61-147	4	30	
2-Chlorotoluene	ug/L	ND	20	20	24.2	23.1	121	116	70-141	5	30	
2-Hexanone	ug/L	ND	40	40	50.8	48.4	127	121	67-139	5	30	
4-Chlorotoluene	ug/L	ND	20	20	23.1	22.2	116	111	70-135	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	47.2	45.9	118	115	67-136	3	30	
Acetone	ug/L	ND	40	40	43.1	42.1	108	105	55-159	2	30	
Benzene	ug/L	ND	20	20	23.0	22.0	115	110	67-150	4	30	
Bromobenzene	ug/L	ND	20	20	22.3	21.8	112	109	70-134	2	30	
Bromochloromethane	ug/L	ND	20	20	22.2	21.5	111	108	70-146	3	30	
Bromodichloromethane	ug/L	ND	20	20	21.7	21.0	108	105	70-138	3	30	
Bromoform	ug/L	ND	20	20	19.9	19.1	100	96	57-138	4	30	
Bromomethane	ug/L	ND	20	20	22.8	23.4	114	117	10-200	2	30	v3
Carbon tetrachloride	ug/L	ND	20	20	23.1	22.7	116	113	70-147	2	30	
Chlorobenzene	ug/L	ND	20	20	22.8	21.9	114	110	70-137	4	30	
Chloroethane	ug/L	ND	20	20	20.9	20.7	104	103	51-166	1	30	IK,IL
Chloroform	ug/L	ND	20	20	22.5	22.0	112	110	70-144	2	30	
Chloromethane	ug/L	ND	20	20	18.6	18.3	93	91	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.1	21.9	110	109	67-148	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	22.9	21.9	114	109	70-142	4	30	
Dibromochloromethane	ug/L	ND	20	20	21.8	20.8	109	104	68-138	5	30	
Dibromomethane	ug/L	ND	20	20	22.0	21.5	110	107	70-134	2	30	
Dichlorodifluoromethane	ug/L	ND	20	20	20.2	20.1	101	100	43-155	1	30	
Diisopropyl ether	ug/L	ND	20	20	21.2	20.5	106	102	65-146	3	30	
Ethylbenzene	ug/L	ND	20	20	23.4	22.5	117	113	68-143	4	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.9	22.5	114	112	62-151	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461392 3461393

Parameter	Units	92572910001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	40	40	47.5	45.7	119	114	53-157	4	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	21.3	20.3	106	102	59-156	5	30	
Methylene Chloride	ug/L	ND	20	20	20.3	19.8	101	99	64-148	2	30	
Naphthalene	ug/L	ND	20	20	23.3	22.3	116	112	57-150	4	30	
o-Xylene	ug/L	ND	20	20	23.2	21.9	116	110	68-143	6	30	
p-Isopropyltoluene	ug/L	ND	20	20	24.0	23.0	120	115	70-141	5	30	
Styrene	ug/L	ND	20	20	23.1	21.9	115	110	70-136	5	30	
Tetrachloroethene	ug/L	ND	20	20	21.1	20.4	106	102	70-139	3	30	
Toluene	ug/L	ND	20	20	22.7	22.0	114	110	47-157	3	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	23.1	21.7	115	108	70-149	6	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	23.3	22.8	116	114	70-138	2	30	
Trichloroethene	ug/L	ND	20	20	22.7	22.3	113	112	70-149	2	30	
Trichlorofluoromethane	ug/L	ND	20	20	20.2	20.3	101	101	61-154	0	30	
Vinyl acetate	ug/L	ND	40	40	47.5	45.3	119	113	48-156	5	30	
Vinyl chloride	ug/L	ND	20	20	22.5	22.2	112	111	55-172	1	30	
Xylene (Total)	ug/L	ND	60	60	70.6	67.7	118	113	66-145	4	30	
1,2-Dichloroethane-d4 (S)	%						96	93	70-130			
4-Bromofluorobenzene (S)	%						102	101	70-130			
Toluene-d8 (S)	%						100	100	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 661304
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915016, 92572915020

METHOD BLANK: 3465080 Matrix: Water
Associated Lab Samples: 92572915016, 92572915020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/19/21 17:19	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/19/21 17:19	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/19/21 17:19	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/19/21 17:19	
1,1-Dichloroethane	ug/L	ND	1.0	11/19/21 17:19	
1,1-Dichloroethene	ug/L	ND	1.0	11/19/21 17:19	
1,1-Dichloropropene	ug/L	ND	1.0	11/19/21 17:19	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/19/21 17:19	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/19/21 17:19	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/19/21 17:19	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	11/19/21 17:19	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/19/21 17:19	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/19/21 17:19	
1,2-Dichloroethane	ug/L	ND	1.0	11/19/21 17:19	
1,2-Dichloropropane	ug/L	ND	1.0	11/19/21 17:19	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/19/21 17:19	
1,3-Dichloropropane	ug/L	ND	1.0	11/19/21 17:19	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/19/21 17:19	
2,2-Dichloropropane	ug/L	ND	1.0	11/19/21 17:19	
2-Butanone (MEK)	ug/L	ND	5.0	11/19/21 17:19	
2-Chlorotoluene	ug/L	ND	1.0	11/19/21 17:19	
2-Hexanone	ug/L	ND	5.0	11/19/21 17:19	
4-Chlorotoluene	ug/L	ND	1.0	11/19/21 17:19	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/19/21 17:19	
Acetone	ug/L	ND	25.0	11/19/21 17:19	
Benzene	ug/L	ND	1.0	11/19/21 17:19	
Bromobenzene	ug/L	ND	1.0	11/19/21 17:19	
Bromochloromethane	ug/L	ND	1.0	11/19/21 17:19	
Bromodichloromethane	ug/L	ND	1.0	11/19/21 17:19	
Bromoform	ug/L	ND	1.0	11/19/21 17:19	
Bromomethane	ug/L	ND	2.0	11/19/21 17:19	v2
Carbon tetrachloride	ug/L	ND	1.0	11/19/21 17:19	
Chlorobenzene	ug/L	ND	1.0	11/19/21 17:19	
Chloroethane	ug/L	ND	1.0	11/19/21 17:19	
Chloroform	ug/L	ND	1.0	11/19/21 17:19	
Chloromethane	ug/L	ND	1.0	11/19/21 17:19	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/19/21 17:19	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/19/21 17:19	
Dibromochloromethane	ug/L	ND	1.0	11/19/21 17:19	
Dibromomethane	ug/L	ND	1.0	11/19/21 17:19	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

METHOD BLANK: 3465080 Matrix: Water
Associated Lab Samples: 92572915016, 92572915020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/19/21 17:19	v1
Diisopropyl ether	ug/L	ND	1.0	11/19/21 17:19	
Ethylbenzene	ug/L	ND	1.0	11/19/21 17:19	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	11/19/21 17:19	
m&p-Xylene	ug/L	ND	2.0	11/19/21 17:19	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/19/21 17:19	
Methylene Chloride	ug/L	ND	5.0	11/19/21 17:19	
Naphthalene	ug/L	ND	1.0	11/19/21 17:19	
o-Xylene	ug/L	ND	1.0	11/19/21 17:19	
p-Isopropyltoluene	ug/L	ND	1.0	11/19/21 17:19	
Styrene	ug/L	ND	1.0	11/19/21 17:19	
Tetrachloroethene	ug/L	ND	1.0	11/19/21 17:19	
Toluene	ug/L	ND	1.0	11/19/21 17:19	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/19/21 17:19	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/19/21 17:19	
Trichloroethene	ug/L	ND	1.0	11/19/21 17:19	
Trichlorofluoromethane	ug/L	ND	1.0	11/19/21 17:19	
Vinyl acetate	ug/L	ND	2.0	11/19/21 17:19	
Vinyl chloride	ug/L	ND	1.0	11/19/21 17:19	
Xylene (Total)	ug/L	ND	1.0	11/19/21 17:19	
1,2-Dichloroethane-d4 (S)	%	88	70-130	11/19/21 17:19	
4-Bromofluorobenzene (S)	%	97	70-130	11/19/21 17:19	
Toluene-d8 (S)	%	100	70-130	11/19/21 17:19	

LABORATORY CONTROL SAMPLE: 3465081

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.1	100	70-130	
1,1,1-Trichloroethane	ug/L	50	48.3	97	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	52.4	105	70-130	
1,1,2-Trichloroethane	ug/L	50	51.6	103	70-130	
1,1-Dichloroethane	ug/L	50	50.3	101	70-130	
1,1-Dichloroethene	ug/L	50	46.0	92	70-132	
1,1-Dichloropropene	ug/L	50	50.2	100	70-131	
1,2,3-Trichlorobenzene	ug/L	50	55.1	110	70-134	
1,2,3-Trichloropropane	ug/L	50	47.8	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	54.4	109	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	57.5	115	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	51.7	103	70-130	
1,2-Dichlorobenzene	ug/L	50	53.7	107	70-130	
1,2-Dichloroethane	ug/L	50	43.4	87	70-130	
1,2-Dichloropropane	ug/L	50	50.9	102	70-130	
1,3-Dichlorobenzene	ug/L	50	52.5	105	70-130	
1,3-Dichloropropane	ug/L	50	50.5	101	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

LABORATORY CONTROL SAMPLE: 3465081

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	53.0	106	70-130	
2,2-Dichloropropane	ug/L	50	47.2	94	70-130	
2-Butanone (MEK)	ug/L	100	105	105	70-133	
2-Chlorotoluene	ug/L	50	52.8	106	70-130	
2-Hexanone	ug/L	100	94.9	95	70-130	
4-Chlorotoluene	ug/L	50	50.2	100	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.1	93	70-130	
Acetone	ug/L	100	118	118	70-144	
Benzene	ug/L	50	50.4	101	70-130	
Bromobenzene	ug/L	50	53.7	107	70-130	
Bromochloromethane	ug/L	50	51.8	104	70-130	
Bromodichloromethane	ug/L	50	47.5	95	70-130	
Bromoform	ug/L	50	49.7	99	70-131	
Bromomethane	ug/L	50	34.6	69	30-177	v3
Carbon tetrachloride	ug/L	50	46.5	93	70-130	
Chlorobenzene	ug/L	50	51.1	102	70-130	
Chloroethane	ug/L	50	30.3	61	46-131	
Chloroform	ug/L	50	49.6	99	70-130	
Chloromethane	ug/L	50	54.8	110	49-130	
cis-1,2-Dichloroethene	ug/L	50	49.1	98	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.1	100	70-130	
Dibromochloromethane	ug/L	50	50.5	101	70-130	
Dibromomethane	ug/L	50	51.3	103	70-130	
Dichlorodifluoromethane	ug/L	50	56.2	112	52-134	v1
Diisopropyl ether	ug/L	50	46.6	93	70-131	
Ethylbenzene	ug/L	50	50.0	100	70-130	
Hexachloro-1,3-butadiene	ug/L	50	54.2	108	70-131	
m&p-Xylene	ug/L	100	102	102	70-130	
Methyl-tert-butyl ether	ug/L	50	49.3	99	70-130	
Methylene Chloride	ug/L	50	46.3	93	68-130	
Naphthalene	ug/L	50	57.1	114	70-133	
o-Xylene	ug/L	50	51.5	103	70-130	
p-Isopropyltoluene	ug/L	50	52.1	104	70-130	
Styrene	ug/L	50	53.0	106	70-130	
Tetrachloroethene	ug/L	50	51.3	103	70-130	
Toluene	ug/L	50	50.2	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	50.0	100	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.3	97	70-130	
Trichloroethene	ug/L	50	50.4	101	70-130	
Trichlorofluoromethane	ug/L	50	37.9	76	61-130	
Vinyl acetate	ug/L	100	95.0	95	70-140	
Vinyl chloride	ug/L	50	57.7	115	59-142	
Xylene (Total)	ug/L	150	153	102	70-130	
1,2-Dichloroethane-d4 (S)	%			85	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			100	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465082 3465083

Parameter	Units	92573018002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	400	400	457	450	114	112	70-135	2	30	
1,1,1-Trichloroethane	ug/L	ND	400	400	449	432	112	108	70-148	4	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	400	400	463	467	116	117	70-131	1	30	
1,1,2-Trichloroethane	ug/L	ND	400	400	462	457	115	114	70-136	1	30	
1,1-Dichloroethane	ug/L	ND	400	400	460	445	115	111	70-147	3	30	
1,1-Dichloroethene	ug/L	ND	400	400	417	394	104	99	70-158	6	30	
1,1-Dichloropropene	ug/L	ND	400	400	464	449	116	112	70-149	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	400	400	486	490	121	123	68-140	1	30	
1,2,3-Trichloropropane	ug/L	ND	400	400	429	423	107	106	67-137	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	400	400	480	483	120	121	70-139	1	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	400	400	472	480	118	120	69-136	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	400	400	476	458	119	115	70-137	4	30	
1,2-Dichlorobenzene	ug/L	ND	400	400	482	475	120	119	70-133	1	30	
1,2-Dichloroethane	ug/L	ND	400	400	388	375	97	94	67-138	3	30	
1,2-Dichloropropane	ug/L	ND	400	400	449	435	112	109	70-138	3	30	
1,3-Dichlorobenzene	ug/L	ND	400	400	488	473	122	118	70-133	3	30	
1,3-Dichloropropane	ug/L	ND	400	400	457	448	114	112	70-136	2	30	
1,4-Dichlorobenzene	ug/L	ND	400	400	481	475	120	119	70-133	1	30	
2,2-Dichloropropane	ug/L	ND	400	400	416	392	104	98	52-155	6	30	
2-Butanone (MEK)	ug/L	ND	800	800	845	798	106	100	61-147	6	30	
2-Chlorotoluene	ug/L	ND	400	400	484	472	121	118	70-141	3	30	
2-Hexanone	ug/L	ND	800	800	778	765	97	96	67-139	2	30	
4-Chlorotoluene	ug/L	ND	400	400	463	455	116	114	70-135	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	800	800	775	759	97	95	67-136	2	30	
Acetone	ug/L	ND	800	800	810	789	101	99	55-159	3	30	
Benzene	ug/L	ND	400	400	472	456	118	114	67-150	3	30	
Bromobenzene	ug/L	ND	400	400	495	484	124	121	70-134	2	30	
Bromochloromethane	ug/L	ND	400	400	489	474	122	118	70-146	3	30	
Bromodichloromethane	ug/L	ND	400	400	409	402	102	100	70-138	2	30	
Bromoform	ug/L	ND	400	400	422	421	105	105	57-138	0	30	
Bromomethane	ug/L	ND	400	400	273	293	68	73	10-200	7	30	v3
Carbon tetrachloride	ug/L	ND	400	400	433	427	108	107	70-147	1	30	
Chlorobenzene	ug/L	ND	400	400	487	469	122	117	70-137	4	30	
Chloroethane	ug/L	ND	400	400	341	341	85	85	51-166	0	30	
Chloroform	ug/L	ND	400	400	496	471	119	113	70-144	5	30	
Chloromethane	ug/L	ND	400	400	478	447	120	112	24-161	7	30	
cis-1,2-Dichloroethene	ug/L	77.0	400	400	532	513	114	109	67-148	4	30	
cis-1,3-Dichloropropene	ug/L	ND	400	400	434	419	108	105	70-142	3	30	
Dibromochloromethane	ug/L	ND	400	400	443	436	111	109	68-138	2	30	
Dibromomethane	ug/L	ND	400	400	461	456	115	114	70-134	1	30	
Dichlorodifluoromethane	ug/L	ND	400	400	544	513	136	128	43-155	6	30	v1
Diisopropyl ether	ug/L	ND	400	400	414	382	104	96	65-146	8	30	
Ethylbenzene	ug/L	ND	400	400	471	461	118	115	68-143	2	30	
Hexachloro-1,3-butadiene	ug/L	ND	400	400	507	506	127	127	62-151	0	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465082 3465083

Parameter	Units	92573018002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	800	800	954	929	119	116	53-157	3	30	
Methyl-tert-butyl ether	ug/L	ND	400	400	438	425	109	106	59-156	3	30	
Methylene Chloride	ug/L	ND	400	400	434	412	109	103	64-148	5	30	
Naphthalene	ug/L	ND	400	400	479	486	120	122	57-150	1	30	
o-Xylene	ug/L	ND	400	400	476	470	119	117	68-143	1	30	
p-Isopropyltoluene	ug/L	ND	400	400	480	470	120	118	70-141	2	30	
Styrene	ug/L	ND	400	400	495	479	124	120	70-136	3	30	
Tetrachloroethene	ug/L	2470	400	400	3020	3000	136	130	70-139	1	30	
Toluene	ug/L	ND	400	400	468	457	117	114	47-157	2	30	
trans-1,2-Dichloroethene	ug/L	ND	400	400	474	455	119	114	70-149	4	30	
trans-1,3-Dichloropropene	ug/L	ND	400	400	420	408	105	102	70-138	3	30	
Trichloroethene	ug/L	51.7	400	400	530	519	120	117	70-149	2	30	
Trichlorofluoromethane	ug/L	ND	400	400	393	380	98	95	61-154	3	30	
Vinyl acetate	ug/L	ND	800	800	844	799	105	100	48-156	5	30	
Vinyl chloride	ug/L	ND	400	400	536	494	134	123	55-172	8	30	
Xylene (Total)	ug/L	ND	1200	1200	1430	1400	119	117	66-145	2	30	
1,2-Dichloroethane-d4 (S)	%						81	82	70-130			
4-Bromofluorobenzene (S)	%						96	98	70-130			
Toluene-d8 (S)	%						99	99	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 661552
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92572915017

METHOD BLANK: 3466240 Matrix: Water
Associated Lab Samples: 92572915017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/23/21 00:26	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/23/21 00:26	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/23/21 00:26	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/23/21 00:26	
1,1-Dichloroethane	ug/L	ND	1.0	11/23/21 00:26	
1,1-Dichloroethene	ug/L	ND	1.0	11/23/21 00:26	
1,1-Dichloropropene	ug/L	ND	1.0	11/23/21 00:26	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/23/21 00:26	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/23/21 00:26	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/23/21 00:26	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	11/23/21 00:26	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/23/21 00:26	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/23/21 00:26	
1,2-Dichloroethane	ug/L	ND	1.0	11/23/21 00:26	
1,2-Dichloropropane	ug/L	ND	1.0	11/23/21 00:26	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/23/21 00:26	
1,3-Dichloropropane	ug/L	ND	1.0	11/23/21 00:26	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/23/21 00:26	
2,2-Dichloropropane	ug/L	ND	1.0	11/23/21 00:26	
2-Butanone (MEK)	ug/L	ND	5.0	11/23/21 00:26	
2-Chlorotoluene	ug/L	ND	1.0	11/23/21 00:26	
2-Hexanone	ug/L	ND	5.0	11/23/21 00:26	
4-Chlorotoluene	ug/L	ND	1.0	11/23/21 00:26	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/23/21 00:26	
Acetone	ug/L	ND	25.0	11/23/21 00:26	
Benzene	ug/L	ND	1.0	11/23/21 00:26	
Bromobenzene	ug/L	ND	1.0	11/23/21 00:26	
Bromochloromethane	ug/L	ND	1.0	11/23/21 00:26	
Bromodichloromethane	ug/L	ND	1.0	11/23/21 00:26	
Bromoform	ug/L	ND	1.0	11/23/21 00:26	
Bromomethane	ug/L	ND	2.0	11/23/21 00:26	
Carbon tetrachloride	ug/L	ND	1.0	11/23/21 00:26	
Chlorobenzene	ug/L	ND	1.0	11/23/21 00:26	
Chloroethane	ug/L	ND	1.0	11/23/21 00:26	v1
Chloroform	ug/L	ND	1.0	11/23/21 00:26	
Chloromethane	ug/L	ND	1.0	11/23/21 00:26	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/23/21 00:26	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/23/21 00:26	
Dibromochloromethane	ug/L	ND	1.0	11/23/21 00:26	
Dibromomethane	ug/L	ND	1.0	11/23/21 00:26	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

METHOD BLANK: 3466240 Matrix: Water
Associated Lab Samples: 92572915017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/23/21 00:26	
Diisopropyl ether	ug/L	ND	1.0	11/23/21 00:26	
Ethylbenzene	ug/L	ND	1.0	11/23/21 00:26	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	11/23/21 00:26	
m&p-Xylene	ug/L	ND	2.0	11/23/21 00:26	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/23/21 00:26	
Methylene Chloride	ug/L	ND	5.0	11/23/21 00:26	
Naphthalene	ug/L	ND	1.0	11/23/21 00:26	
o-Xylene	ug/L	ND	1.0	11/23/21 00:26	
p-Isopropyltoluene	ug/L	ND	1.0	11/23/21 00:26	
Styrene	ug/L	ND	1.0	11/23/21 00:26	
Tetrachloroethene	ug/L	ND	1.0	11/23/21 00:26	
Toluene	ug/L	ND	1.0	11/23/21 00:26	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/23/21 00:26	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/23/21 00:26	
Trichloroethene	ug/L	ND	1.0	11/23/21 00:26	
Trichlorofluoromethane	ug/L	ND	1.0	11/23/21 00:26	
Vinyl acetate	ug/L	ND	2.0	11/23/21 00:26	
Vinyl chloride	ug/L	ND	1.0	11/23/21 00:26	
Xylene (Total)	ug/L	ND	1.0	11/23/21 00:26	
1,2-Dichloroethane-d4 (S)	%	91	70-130	11/23/21 00:26	
4-Bromofluorobenzene (S)	%	96	70-130	11/23/21 00:26	
Toluene-d8 (S)	%	107	70-130	11/23/21 00:26	

LABORATORY CONTROL SAMPLE: 3466241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.8	102	70-130	
1,1,1-Trichloroethane	ug/L	50	50.4	101	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.2	100	70-130	
1,1,2-Trichloroethane	ug/L	50	51.3	103	70-130	
1,1-Dichloroethane	ug/L	50	50.7	101	70-130	
1,1-Dichloroethene	ug/L	50	49.1	98	70-132	
1,1-Dichloropropene	ug/L	50	54.0	108	70-131	
1,2,3-Trichlorobenzene	ug/L	50	45.3	91	70-134	
1,2,3-Trichloropropane	ug/L	50	48.5	97	70-130	
1,2,4-Trichlorobenzene	ug/L	50	45.2	90	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	45.2	90	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	52.7	105	70-130	
1,2-Dichlorobenzene	ug/L	50	49.1	98	70-130	
1,2-Dichloroethane	ug/L	50	48.8	98	70-130	
1,2-Dichloropropane	ug/L	50	49.6	99	70-130	
1,3-Dichlorobenzene	ug/L	50	48.8	98	70-130	
1,3-Dichloropropane	ug/L	50	50.8	102	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

LABORATORY CONTROL SAMPLE: 3466241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	48.2	96	70-130	
2,2-Dichloropropane	ug/L	50	49.0	98	70-130	
2-Butanone (MEK)	ug/L	100	96.3	96	70-133	
2-Chlorotoluene	ug/L	50	51.2	102	70-130	
2-Hexanone	ug/L	100	94.7	95	70-130	
4-Chlorotoluene	ug/L	50	50.7	101	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	90.6	91	70-130	
Acetone	ug/L	100	87.7	88	70-144	
Benzene	ug/L	50	48.0	96	70-130	
Bromobenzene	ug/L	50	49.6	99	70-130	
Bromochloromethane	ug/L	50	49.4	99	70-130	
Bromodichloromethane	ug/L	50	49.1	98	70-130	
Bromoform	ug/L	50	52.3	105	70-131	
Bromomethane	ug/L	50	51.4	103	30-177	
Carbon tetrachloride	ug/L	50	47.4	95	70-130	
Chlorobenzene	ug/L	50	48.5	97	70-130	
Chloroethane	ug/L	50	61.8	124	46-131	v1
Chloroform	ug/L	50	50.9	102	70-130	
Chloromethane	ug/L	50	53.8	108	49-130	
cis-1,2-Dichloroethene	ug/L	50	48.9	98	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.0	100	70-130	
Dibromochloromethane	ug/L	50	54.5	109	70-130	
Dibromomethane	ug/L	50	43.9	88	70-130	
Dichlorodifluoromethane	ug/L	50	52.0	104	52-134	
Diisopropyl ether	ug/L	50	50.4	101	70-131	
Ethylbenzene	ug/L	50	50.2	100	70-130	
Hexachloro-1,3-butadiene	ug/L	50	43.7	87	70-131	
m&p-Xylene	ug/L	100	101	101	70-130	
Methyl-tert-butyl ether	ug/L	50	49.4	99	70-130	
Methylene Chloride	ug/L	50	50.3	101	68-130	
Naphthalene	ug/L	50	45.8	92	70-133	
o-Xylene	ug/L	50	49.3	99	70-130	
p-Isopropyltoluene	ug/L	50	48.6	97	70-130	
Styrene	ug/L	50	50.4	101	70-130	
Tetrachloroethene	ug/L	50	49.2	98	70-130	
Toluene	ug/L	50	46.0	92	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.7	99	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.5	97	70-130	
Trichloroethene	ug/L	50	50.1	100	70-130	
Trichlorofluoromethane	ug/L	50	51.6	103	61-130	
Vinyl acetate	ug/L	100	102	102	70-140	
Vinyl chloride	ug/L	50	52.1	104	59-142	
Xylene (Total)	ug/L	150	150	100	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			94	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3466242 3466243

Parameter	Units	92573348004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	250	250	279	266	112	106	70-135	5	30	
1,1,1-Trichloroethane	ug/L	ND	250	250	282	295	113	118	70-148	4	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	250	250	258	234	103	94	70-131	10	30	
1,1,2-Trichloroethane	ug/L	ND	250	250	286	284	114	114	70-136	1	30	
1,1-Dichloroethane	ug/L	ND	250	250	287	288	115	115	70-147	0	30	
1,1-Dichloroethene	ug/L	ND	250	250	287	289	115	116	70-158	1	30	
1,1-Dichloropropene	ug/L	ND	250	250	297	292	119	117	70-149	2	30	
1,2,3-Trichlorobenzene	ug/L	ND	250	250	250	246	100	98	68-140	2	30	
1,2,3-Trichloropropane	ug/L	ND	250	250	241	238	96	95	67-137	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	250	250	246	238	99	95	70-139	3	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	250	250	225	214	90	86	69-136	5	30	
1,2-Dibromoethane (EDB)	ug/L	ND	250	250	281	264	112	106	70-137	6	30	
1,2-Dichlorobenzene	ug/L	ND	250	250	272	270	109	108	70-133	1	30	
1,2-Dichloroethane	ug/L	ND	250	250	269	271	108	108	67-138	1	30	
1,2-Dichloropropane	ug/L	ND	250	250	278	283	111	113	70-138	2	30	
1,3-Dichlorobenzene	ug/L	ND	250	250	270	279	108	112	70-133	3	30	
1,3-Dichloropropane	ug/L	ND	250	250	259	260	103	104	70-136	1	30	
1,4-Dichlorobenzene	ug/L	ND	250	250	265	271	106	108	70-133	2	30	
2,2-Dichloropropane	ug/L	ND	250	250	225	223	90	89	52-155	1	30	
2-Butanone (MEK)	ug/L	ND	500	500	534	440	107	88	61-147	19	30	
2-Chlorotoluene	ug/L	ND	250	250	281	293	112	117	70-141	4	30	
2-Hexanone	ug/L	ND	500	500	450	404	90	81	67-139	11	30	
4-Chlorotoluene	ug/L	ND	250	250	277	277	111	111	70-135	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	500	500	480	424	96	85	67-136	12	30	
Acetone	ug/L	ND	500	500	533	449	107	90	55-159	17	30	
Benzene	ug/L	ND	250	250	281	265	112	106	67-150	6	30	
Bromobenzene	ug/L	ND	250	250	274	272	109	109	70-134	0	30	
Bromochloromethane	ug/L	ND	250	250	302	296	121	118	70-146	2	30	
Bromodichloromethane	ug/L	ND	250	250	269	270	107	108	70-138	0	30	
Bromoform	ug/L	ND	250	250	249	248	100	99	57-138	1	30	
Bromomethane	ug/L	ND	250	250	271	328	108	131	10-200	19	30	
Carbon tetrachloride	ug/L	ND	250	250	281	284	113	114	70-147	1	30	
Chlorobenzene	ug/L	ND	250	250	273	275	109	110	70-137	1	30	
Chloroethane	ug/L	ND	250	250	373	362	149	145	51-166	3	30	v1
Chloroform	ug/L	ND	250	250	301	280	119	110	70-144	7	30	
Chloromethane	ug/L	ND	250	250	286	291	114	117	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	41.0	250	250	331	325	116	114	67-148	2	30	
cis-1,3-Dichloropropene	ug/L	ND	250	250	255	245	102	98	70-142	4	30	
Dibromochloromethane	ug/L	ND	250	250	276	272	110	109	68-138	2	30	
Dibromomethane	ug/L	ND	250	250	261	263	104	105	70-134	1	30	
Dichlorodifluoromethane	ug/L	ND	250	250	231	230	92	92	43-155	0	30	
Diisopropyl ether	ug/L	ND	250	250	263	254	105	102	65-146	4	30	
Ethylbenzene	ug/L	ND	250	250	280	284	112	113	68-143	1	30	
Hexachloro-1,3-butadiene	ug/L	ND	250	250	239	245	95	98	62-151	3	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3466242 3466243

Parameter	Units	92573348004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	500	500	559	565	112	113	53-157	1	30	
Methyl-tert-butyl ether	ug/L	ND	250	250	247	242	99	97	59-156	2	30	
Methylene Chloride	ug/L	ND	250	250	314	297	126	119	64-148	6	30	
Naphthalene	ug/L	ND	250	250	247	241	99	97	57-150	2	30	
o-Xylene	ug/L	ND	250	250	269	276	107	110	68-143	3	30	
p-Isopropyltoluene	ug/L	ND	250	250	258	263	103	105	70-141	2	30	
Styrene	ug/L	ND	250	250	268	272	107	109	70-136	1	30	
Tetrachloroethene	ug/L	1510	250	250	1790	1860	112	140	70-139	4	30	M1
Toluene	ug/L	ND	250	250	279	270	111	108	47-157	3	30	
trans-1,2-Dichloroethene	ug/L	ND	250	250	291	286	116	115	70-149	2	30	
trans-1,3-Dichloropropene	ug/L	ND	250	250	238	249	95	99	70-138	4	30	
Trichloroethene	ug/L	ND	250	250	297	308	115	119	70-149	4	30	
Trichlorofluoromethane	ug/L	ND	250	250	298	299	119	119	61-154	0	30	
Vinyl acetate	ug/L	ND	500	500	501	463	100	93	48-156	8	30	
Vinyl chloride	ug/L	ND	250	250	301	304	121	122	55-172	1	30	
Xylene (Total)	ug/L	ND	750	750	828	841	110	112	66-145	2	30	
1,2-Dichloroethane-d4 (S)	%						101	101	70-130			
4-Bromofluorobenzene (S)	%						96	99	70-130			
Toluene-d8 (S)	%						99	97	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 661839
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92572915021

METHOD BLANK: 3467598 Matrix: Water
Associated Lab Samples: 92572915021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/23/21 13:22	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/23/21 13:22	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/23/21 13:22	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/23/21 13:22	
1,1-Dichloroethane	ug/L	ND	1.0	11/23/21 13:22	
1,1-Dichloroethene	ug/L	ND	1.0	11/23/21 13:22	
1,1-Dichloropropene	ug/L	ND	1.0	11/23/21 13:22	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/23/21 13:22	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/23/21 13:22	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/23/21 13:22	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	11/23/21 13:22	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/23/21 13:22	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/23/21 13:22	
1,2-Dichloroethane	ug/L	ND	1.0	11/23/21 13:22	
1,2-Dichloropropane	ug/L	ND	1.0	11/23/21 13:22	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/23/21 13:22	
1,3-Dichloropropane	ug/L	ND	1.0	11/23/21 13:22	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/23/21 13:22	
2,2-Dichloropropane	ug/L	ND	1.0	11/23/21 13:22	
2-Butanone (MEK)	ug/L	ND	5.0	11/23/21 13:22	
2-Chlorotoluene	ug/L	ND	1.0	11/23/21 13:22	
2-Hexanone	ug/L	ND	5.0	11/23/21 13:22	
4-Chlorotoluene	ug/L	ND	1.0	11/23/21 13:22	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/23/21 13:22	
Acetone	ug/L	ND	25.0	11/23/21 13:22	
Benzene	ug/L	ND	1.0	11/23/21 13:22	
Bromobenzene	ug/L	ND	1.0	11/23/21 13:22	
Bromochloromethane	ug/L	ND	1.0	11/23/21 13:22	
Bromodichloromethane	ug/L	ND	1.0	11/23/21 13:22	
Bromoform	ug/L	ND	1.0	11/23/21 13:22	
Bromomethane	ug/L	ND	2.0	11/23/21 13:22	
Carbon tetrachloride	ug/L	ND	1.0	11/23/21 13:22	
Chlorobenzene	ug/L	ND	1.0	11/23/21 13:22	
Chloroethane	ug/L	ND	1.0	11/23/21 13:22	
Chloroform	ug/L	ND	1.0	11/23/21 13:22	
Chloromethane	ug/L	ND	1.0	11/23/21 13:22	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/23/21 13:22	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/23/21 13:22	
Dibromochloromethane	ug/L	ND	1.0	11/23/21 13:22	
Dibromomethane	ug/L	ND	1.0	11/23/21 13:22	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

METHOD BLANK: 3467598 Matrix: Water
Associated Lab Samples: 92572915021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/23/21 13:22	
Diisopropyl ether	ug/L	ND	1.0	11/23/21 13:22	
Ethylbenzene	ug/L	ND	1.0	11/23/21 13:22	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	11/23/21 13:22	
m&p-Xylene	ug/L	ND	2.0	11/23/21 13:22	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/23/21 13:22	
Methylene Chloride	ug/L	ND	5.0	11/23/21 13:22	
Naphthalene	ug/L	ND	1.0	11/23/21 13:22	
o-Xylene	ug/L	ND	1.0	11/23/21 13:22	
p-Isopropyltoluene	ug/L	ND	1.0	11/23/21 13:22	
Styrene	ug/L	ND	1.0	11/23/21 13:22	
Tetrachloroethene	ug/L	ND	1.0	11/23/21 13:22	
Toluene	ug/L	ND	1.0	11/23/21 13:22	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/23/21 13:22	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/23/21 13:22	
Trichloroethene	ug/L	ND	1.0	11/23/21 13:22	
Trichlorofluoromethane	ug/L	ND	1.0	11/23/21 13:22	
Vinyl acetate	ug/L	ND	2.0	11/23/21 13:22	
Vinyl chloride	ug/L	ND	1.0	11/23/21 13:22	
Xylene (Total)	ug/L	ND	1.0	11/23/21 13:22	
1,2-Dichloroethane-d4 (S)	%	102	70-130	11/23/21 13:22	
4-Bromofluorobenzene (S)	%	95	70-130	11/23/21 13:22	
Toluene-d8 (S)	%	108	70-130	11/23/21 13:22	

LABORATORY CONTROL SAMPLE: 3467599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.1	106	70-130	
1,1,1-Trichloroethane	ug/L	50	49.8	100	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.6	103	70-130	
1,1,2-Trichloroethane	ug/L	50	53.3	107	70-130	
1,1-Dichloroethane	ug/L	50	49.4	99	70-130	
1,1-Dichloroethene	ug/L	50	47.5	95	70-132	
1,1-Dichloropropene	ug/L	50	55.0	110	70-131	
1,2,3-Trichlorobenzene	ug/L	50	47.0	94	70-134	
1,2,3-Trichloropropane	ug/L	50	51.6	103	70-130	
1,2,4-Trichlorobenzene	ug/L	50	45.7	91	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	49.9	100	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	55.3	111	70-130	
1,2-Dichlorobenzene	ug/L	50	49.6	99	70-130	
1,2-Dichloroethane	ug/L	50	48.9	98	70-130	
1,2-Dichloropropane	ug/L	50	51.3	103	70-130	
1,3-Dichlorobenzene	ug/L	50	49.4	99	70-130	
1,3-Dichloropropane	ug/L	50	51.6	103	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

LABORATORY CONTROL SAMPLE: 3467599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	49.1	98	70-130	
2,2-Dichloropropane	ug/L	50	50.5	101	70-130	
2-Butanone (MEK)	ug/L	100	108	108	70-133	
2-Chlorotoluene	ug/L	50	51.7	103	70-130	
2-Hexanone	ug/L	100	106	106	70-130	
4-Chlorotoluene	ug/L	50	51.4	103	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.0	98	70-130	
Acetone	ug/L	100	92.3	92	70-144	
Benzene	ug/L	50	48.5	97	70-130	
Bromobenzene	ug/L	50	50.7	101	70-130	
Bromochloromethane	ug/L	50	51.7	103	70-130	
Bromodichloromethane	ug/L	50	49.3	99	70-130	
Bromoform	ug/L	50	53.8	108	70-131	
Bromomethane	ug/L	50	52.1	104	30-177	
Carbon tetrachloride	ug/L	50	47.5	95	70-130	
Chlorobenzene	ug/L	50	50.5	101	70-130	
Chloroethane	ug/L	50	63.7	127	46-131	
Chloroform	ug/L	50	49.7	99	70-130	
Chloromethane	ug/L	50	55.1	110	49-130	
cis-1,2-Dichloroethene	ug/L	50	50.2	100	70-130	
cis-1,3-Dichloropropene	ug/L	50	52.6	105	70-130	
Dibromochloromethane	ug/L	50	57.4	115	70-130	
Dibromomethane	ug/L	50	47.0	94	70-130	
Dichlorodifluoromethane	ug/L	50	51.9	104	52-134	
Diisopropyl ether	ug/L	50	51.8	104	70-131	
Ethylbenzene	ug/L	50	51.5	103	70-130	
Hexachloro-1,3-butadiene	ug/L	50	45.1	90	70-131	
m&p-Xylene	ug/L	100	104	104	70-130	
Methyl-tert-butyl ether	ug/L	50	51.7	103	70-130	
Methylene Chloride	ug/L	50	52.2	104	68-130	
Naphthalene	ug/L	50	48.9	98	70-133	
o-Xylene	ug/L	50	49.1	98	70-130	
p-Isopropyltoluene	ug/L	50	48.9	98	70-130	
Styrene	ug/L	50	51.7	103	70-130	
Tetrachloroethene	ug/L	50	51.2	102	70-130	
Toluene	ug/L	50	46.8	94	70-130	
trans-1,2-Dichloroethene	ug/L	50	48.1	96	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.6	101	70-130	
Trichloroethene	ug/L	50	51.3	103	70-130	
Trichlorofluoromethane	ug/L	50	52.8	106	61-130	
Vinyl acetate	ug/L	100	108	108	70-140	
Vinyl chloride	ug/L	50	52.3	105	59-142	
Xylene (Total)	ug/L	150	153	102	70-130	
1,2-Dichloroethane-d4 (S)	%			105	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			95	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467600 3467601

Parameter	Units	92573187006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	400	400	423	423	106	106	70-135	0	30	
1,1,1-Trichloroethane	ug/L	56.6	400	400	526	514	117	114	70-148	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	400	400	396	403	99	101	70-131	2	30	
1,1,2-Trichloroethane	ug/L	ND	400	400	448	443	112	111	70-136	1	30	
1,1-Dichloroethane	ug/L	ND	400	400	449	439	112	110	70-147	2	30	
1,1-Dichloroethene	ug/L	ND	400	400	486	462	121	115	70-158	5	30	
1,1-Dichloropropene	ug/L	ND	400	400	484	468	121	117	70-149	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	400	400	391	399	98	100	68-140	2	30	
1,2,3-Trichloropropane	ug/L	ND	400	400	386	394	97	98	67-137	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	400	400	387	406	97	102	70-139	5	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	400	400	350	392	88	98	69-136	11	30	
1,2-Dibromoethane (EDB)	ug/L	ND	400	400	436	439	109	110	70-137	1	30	
1,2-Dichlorobenzene	ug/L	ND	400	400	429	424	107	106	70-133	1	30	
1,2-Dichloroethane	ug/L	ND	400	400	434	417	109	104	67-138	4	30	
1,2-Dichloropropane	ug/L	ND	400	400	457	461	114	115	70-138	1	30	
1,3-Dichlorobenzene	ug/L	ND	400	400	424	435	106	109	70-133	3	30	
1,3-Dichloropropane	ug/L	ND	400	400	400	417	100	104	70-136	4	30	
1,4-Dichlorobenzene	ug/L	ND	400	400	422	423	106	106	70-133	0	30	
2,2-Dichloropropane	ug/L	ND	400	400	397	374	99	94	52-155	6	30	
2-Butanone (MEK)	ug/L	ND	800	800	830	827	104	103	61-147	0	30	
2-Chlorotoluene	ug/L	ND	400	400	446	460	112	115	70-141	3	30	
2-Hexanone	ug/L	ND	800	800	697	747	87	93	67-139	7	30	
4-Chlorotoluene	ug/L	ND	400	400	433	441	108	110	70-135	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	800	800	714	726	89	91	67-136	2	30	
Acetone	ug/L	ND	800	800	769	776	96	97	55-159	1	30	
Benzene	ug/L	ND	400	400	447	433	112	108	67-150	3	30	
Bromobenzene	ug/L	ND	400	400	430	446	107	111	70-134	4	30	
Bromochloromethane	ug/L	ND	400	400	474	472	118	118	70-146	0	30	
Bromodichloromethane	ug/L	ND	400	400	450	430	112	107	70-138	5	30	
Bromoform	ug/L	ND	400	400	402	399	100	100	57-138	1	30	
Bromomethane	ug/L	ND	400	400	462	501	116	125	10-200	8	30	
Carbon tetrachloride	ug/L	ND	400	400	442	432	110	108	70-147	2	30	
Chlorobenzene	ug/L	ND	400	400	435	432	109	108	70-137	1	30	
Chloroethane	ug/L	ND	400	400	612	514	153	128	51-166	17	30	
Chloroform	ug/L	ND	400	400	439	459	110	115	70-144	4	30	
Chloromethane	ug/L	ND	400	400	500	490	125	122	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	34.7	400	400	488	471	113	109	67-148	4	30	
cis-1,3-Dichloropropene	ug/L	ND	400	400	420	417	105	104	70-142	1	30	
Dibromochloromethane	ug/L	ND	400	400	456	437	114	109	68-138	4	30	
Dibromomethane	ug/L	ND	400	400	421	417	105	104	70-134	1	30	
Dichlorodifluoromethane	ug/L	ND	400	400	499	499	125	125	43-155	0	30	
Diisopropyl ether	ug/L	ND	400	400	401	398	100	99	65-146	1	30	
Ethylbenzene	ug/L	ND	400	400	447	435	112	109	68-143	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	400	400	381	414	95	103	62-151	8	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467600 3467601

Parameter	Units	92573187006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	800	800	907	866	113	108	53-157	5	30	
Methyl-tert-butyl ether	ug/L	ND	400	400	398	404	99	101	59-156	2	30	
Methylene Chloride	ug/L	ND	400	400	460	488	115	122	64-148	6	30	
Naphthalene	ug/L	ND	400	400	390	404	97	101	57-150	4	30	
o-Xylene	ug/L	ND	400	400	443	417	111	104	68-143	6	30	
p-Isopropyltoluene	ug/L	ND	400	400	418	431	105	108	70-141	3	30	
Styrene	ug/L	ND	400	400	440	426	110	107	70-136	3	30	
Tetrachloroethene	ug/L	21.9	400	400	461	448	110	106	70-139	3	30	
Toluene	ug/L	ND	400	400	437	430	109	108	47-157	2	30	
trans-1,2-Dichloroethene	ug/L	ND	400	400	450	448	113	112	70-149	1	30	
trans-1,3-Dichloropropene	ug/L	ND	400	400	389	381	97	95	70-138	2	30	
Trichloroethene	ug/L	1640	400	400	2260	2270	154	157	70-149	0	30	M1
Trichlorofluoromethane	ug/L	ND	400	400	500	493	125	123	61-154	1	30	
Vinyl acetate	ug/L	ND	800	800	800	830	100	104	48-156	4	30	
Vinyl chloride	ug/L	ND	400	400	509	512	127	128	55-172	1	30	
Xylene (Total)	ug/L	ND	1200	1200	1350	1280	112	107	66-145	5	30	
1,2-Dichloroethane-d4 (S)	%						101	102	70-130			
4-Bromofluorobenzene (S)	%						99	98	70-130			
Toluene-d8 (S)	%						98	97	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 660613
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915004, 92572915006, 92572915007, 92572915008, 92572915009, 92572915011, 92572915012, 92572915014

METHOD BLANK: 3461559 Matrix: Water
Associated Lab Samples: 92572915004, 92572915006, 92572915007, 92572915008, 92572915009, 92572915011, 92572915012, 92572915014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/17/21 16:11	
1,2-Dichloroethane-d4 (S)	%	94	70-130	11/17/21 16:11	
Toluene-d8 (S)	%	90	66-133	11/17/21 16:11	

LABORATORY CONTROL SAMPLE: 3461560

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.4	97	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
Toluene-d8 (S)	%			91	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461561 3461562

Parameter	Units	92572910001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	5.1	20	20	25.1	23.3	100	91	64-141	7	30	
1,2-Dichloroethane-d4 (S)	%						92	96	70-130		30	
Toluene-d8 (S)	%						85	87	66-133		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 660615
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915001, 92572915002, 92572915003, 92572915005, 92572915010, 92572915013, 92572915015, 92572915016, 92572915017, 92572915018, 92572915019

METHOD BLANK: 3461571 Matrix: Water
Associated Lab Samples: 92572915001, 92572915002, 92572915003, 92572915005, 92572915010, 92572915013, 92572915015, 92572915016, 92572915017, 92572915018, 92572915019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/17/21 16:12	
1,2-Dichloroethane-d4 (S)	%	102	70-130	11/17/21 16:12	
Toluene-d8 (S)	%	102	66-133	11/17/21 16:12	

LABORATORY CONTROL SAMPLE: 3461572

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.2	101	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
Toluene-d8 (S)	%			102	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461573 3461574

Parameter	Units	92572915001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	20.8	19.5	104	98	64-141	6	30	
1,2-Dichloroethane-d4 (S)	%						101	98	70-130		30	
Toluene-d8 (S)	%						100	99	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 660643
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915023

METHOD BLANK: 3461865 Matrix: Water
Associated Lab Samples: 92572915023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/17/21 16:30	
1,2-Dichloroethane-d4 (S)	%	92	70-130	11/17/21 16:30	
Toluene-d8 (S)	%	91	66-133	11/17/21 16:30	

LABORATORY CONTROL SAMPLE: 3461866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	22.0	110	70-130	
1,2-Dichloroethane-d4 (S)	%			82	70-130	
Toluene-d8 (S)	%			106	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461867 3461868

Parameter	Units	92573022001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	20.6	20.1	103	101	64-141	2	30	
1,2-Dichloroethane-d4 (S)	%						96	101	70-130		30	
Toluene-d8 (S)	%						86	90	66-133		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

QC Batch: 660958
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92572915020, 92572915021, 92572915022

METHOD BLANK: 3463490 Matrix: Water
Associated Lab Samples: 92572915020, 92572915021, 92572915022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/18/21 18:07	
1,2-Dichloroethane-d4 (S)	%	96	70-130	11/18/21 18:07	
Toluene-d8 (S)	%	89	66-133	11/18/21 18:07	

LABORATORY CONTROL SAMPLE: 3463491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.6	98	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
Toluene-d8 (S)	%			88	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3463492 3463493

Parameter	Units	92572910015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	396	200	200	669	656	137	130	64-141	2	30	
1,2-Dichloroethane-d4 (S)	%						100	102	70-130		30	
Toluene-d8 (S)	%						89	89	66-133		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
IL	This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

Pace Analytical Services, LLC
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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92572915001	MW-3	EPA 8260D	660595		
92572915002	MW-27D	EPA 8260D	660595		
92572915003	MW-43	EPA 8260D	660595		
92572915004	MW-39	EPA 8260D	660595		
92572915005	MW-38R	EPA 8260D	660595		
92572915006	MW-42	EPA 8260D	660595		
92572915007	MW-18	EPA 8260D	660595		
92572915008	MW-40D	EPA 8260D	660595		
92572915009	MW-5R	EPA 8260D	660595		
92572915010	MW-44	EPA 8260D	660595		
92572915011	MW-21D	EPA 8260D	660595		
92572915012	MW-41D	EPA 8260D	660595		
92572915013	MW-1	EPA 8260D	660595		
92572915014	MW-1D	EPA 8260D	660595		
92572915015	MW-22D	EPA 8260D	660595		
92572915016	MW-4	EPA 8260D	661304		
92572915017	MW-20	EPA 8260D	661552		
92572915018	MW-9	EPA 8260D	660595		
92572915019	MW-23D	EPA 8260D	660597		
92572915020	DUP-111421	EPA 8260D	661304		
92572915021	MW-16	EPA 8260D	661839		
92572915022	MW-16D	EPA 8260D	660597		
92572915023	TRIP BLANK	EPA 8260D	660595		
92572915001	MW-3	EPA 8260D Mod.	660615		
92572915002	MW-27D	EPA 8260D Mod.	660615		
92572915003	MW-43	EPA 8260D Mod.	660615		
92572915004	MW-39	EPA 8260D Mod.	660613		
92572915005	MW-38R	EPA 8260D Mod.	660615		
92572915006	MW-42	EPA 8260D Mod.	660613		
92572915007	MW-18	EPA 8260D Mod.	660613		
92572915008	MW-40D	EPA 8260D Mod.	660613		
92572915009	MW-5R	EPA 8260D Mod.	660613		
92572915010	MW-44	EPA 8260D Mod.	660615		
92572915011	MW-21D	EPA 8260D Mod.	660613		
92572915012	MW-41D	EPA 8260D Mod.	660613		
92572915013	MW-1	EPA 8260D Mod.	660615		
92572915014	MW-1D	EPA 8260D Mod.	660613		
92572915015	MW-22D	EPA 8260D Mod.	660615		
92572915016	MW-4	EPA 8260D Mod.	660615		
92572915017	MW-20	EPA 8260D Mod.	660615		

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: KOP FLEX OFFSITE 31401545.010
Pace Project No.: 92572915

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92572915018	**MW-9**	EPA 8260D Mod.	660615		
92572915019	**MW-23D**	EPA 8260D Mod.	660615		
92572915020	**DUP-111421**	EPA 8260D Mod.	660958		
92572915021	**MW-16**	EPA 8260D Mod.	660958		
92572915022	**MW-16D**	EPA 8260D Mod.	660958		
92572915023	**TRIP BLANK**	EPA 8260D Mod.	660643		

Pace Analytical	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: November 15, 2021 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.08	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Herndon

Project WO#: 92572915

92572915

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: 11/17/21 KS

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T064

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp: 2.0 **Correction Factor:** Add/Subtract (°C) 0

Cooler Temp Corrected (°C): 2.0

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☐ Yes	☑ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	10.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

One DG9H "MW-41D" received broken

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

1/2

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Proje

WO# : 92572915

PM: BV Due Date: 11/30/21

CLIENT: 92-WSP

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (3 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1																6													
2																6													
3																6													
4																6													
5																6													
6																6													
7																6													
8																6													
9																6													
10																6													
11																6													
12																5													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

212

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Project #

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (3 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1																6													
2																6													
3																6													
4																6													
5																6													
6																6													
7																6													
8																6													
9																6													
10																6													
11																4													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

CHAIN-OF-CUSTODY RECORD

No. 10640 — wsp

WSP USA Office Address		Laboratory Name & Location
13530 Dulles Technology Dr. Ste 300 Herndon VA		Pace, NC
Project Name: Kopflex Onsite	**WSP USA Contact Name:** Eric Johnson	**Laboratory Project Manager:** Bonnie Vang
Project Location: Hanover, MD	**WSP USA Contact E-mail:** Eric.Johnson @wsp.com	
Project Number & Task: 31401545.010	**WSP USA Contact Phone:** 703 709 6500	**Requested Turn-Around-Time:** [X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR
Sampler(s) Name(s): Molly Elliott	**Sampler(s) Signature(s):** [signatures]	

Requested Analyses & Preservatives: VOC 8260D; 1,4-Dioxane 8260D SIM

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	VOC 8260D	1,4-Dioxane 8260D SIM	Sample Comments 92577415
MW-3	AQ	11/14/21			09 35	6	X	X	001
MW-27D	|	|			10 00	6	X	X	002
MW-43	|	|			10 10	6	X	X	003
MW-39	|	|			10 25	6	X	X	004
MW-38R	|	|			10 35	6	X	X	005
MW-42	|	|			10 50	6	X	X	006
MW-18	|	|			11 00	6	X	X	007
MW-40D	|	|			11 15	6	X	X	008
MW-5R	|	|			11 25	6	X	X	009
MW-44	|	|			11 40	6	X	X	010
MW-21D	|	|			11 55	6	X	X	011
MW-41D	|	|			13 00	6	X	X	012
MW-1	|	|			13 15	6	X	X	013
MW-1D	|	|			13 25	6	X	X	014
MW-22D	|	|			13 40	6	X	X	015

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
[signature]	11/15/21	1426	KS Pace HVL	11/17/21	1015		
Relinquished By (Signature)	**Date**	**Time**	**Received By (Signature)**	**Date**	**Time**	**Number of Packages**	**Custody Seal Number(s)**

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address: Herndon			No. 10641
Project Name: Kopflex Onsite	WSP USA Contact Name: Eric Johnson		Laboratory Name & Location: Pace NC
Project Location: Havre MD	WSP USA Contact E-mail: Eric.Johnson @wsp.com		Laboratory Project Manager: Bonnie Vang
Project Number & Task: 31401545.010	WSP USA Contact Phone		Requested Turn-Around-Time: (X) Standard ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ ___ HR
Sampler(s) Name(s): Molly Elliott Martynkiewicz	Sampler(s) Signature(s)		

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	Requested Analyses & Preservatives: VOC 8260D	1,4-Dioxane 8260D SIM	Sample Comments
MW-4	GW	11/14/21		13	50	6	X	X	075-7415 016
MW-20				14	00	6	X	X	017
MW-9				14	15	6	X	X	018
MW-23D				14	45	6	X	X	019
DUP-111421				12	00	6	X	X	020
MW-16				~~14~~ 15	~~45~~ 00	6	X	X	021
MW-16D				15	10	6	X	X	022
Trip Blank	+	labprovided							023

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	11/15/21	1426	KS Pace HVL	11/17/21	1015		
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

January 05, 2022

Eric Johnson
WSP USA
13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171

RE: Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on December 30, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92580514001	**RW-1S**	Water	12/29/21 11:50	12/30/21 14:30
92580514002	**RW-2S**	Water	12/29/21 12:00	12/30/21 14:30
92580514003	**RW-3S**	Water	12/29/21 12:05	12/30/21 14:30
92580514004	**RW-1D**	Water	12/29/21 12:15	12/30/21 14:30
92580514005	**RW-2D**	Water	12/29/21 12:20	12/30/21 14:30
92580514006	**TRIP BLANK B**	Water	12/29/21 00:00	12/30/21 14:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92580514001	**RW-1S**	EPA 8260D	NSCQ	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92580514002	**RW-2S**	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92580514003	**RW-3S**	EPA 8260D	NSCQ	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92580514004	**RW-1D**	EPA 8260D	NSCQ	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92580514005	**RW-2D**	EPA 8260D	NSCQ	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92580514006	**TRIP BLANK B**	EPA 8260D	NSCQ	63	PASI-C

PASI-C = Pace Analytical Services - Charlotte

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-1S **Lab ID: 92580514001** Collected: 12/29/21 11:50 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	62.5	2.5		12/31/21 00:32	67-64-1	
Benzene	ND	ug/L	2.5	2.5		12/31/21 00:32	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		12/31/21 00:32	74-97-5	
Bromodichloromethane	ND	ug/L	2.5	2.5		12/31/21 00:32	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		12/31/21 00:32	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		12/31/21 00:32	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	12.5	2.5		12/31/21 00:32	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		12/31/21 00:32	56-23-5	
Chlorobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	108-90-7	
Chloroethane	**13.2**	ug/L	2.5	2.5		12/31/21 00:32	75-00-3	
Chloroform	ND	ug/L	2.5	2.5		12/31/21 00:32	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		12/31/21 00:32	74-87-3	
2-Chlorotoluene	ND	ug/L	2.5	2.5		12/31/21 00:32	95-49-8	
4-Chlorotoluene	ND	ug/L	2.5	2.5		12/31/21 00:32	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5		12/31/21 00:32	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		12/31/21 00:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.5	2.5		12/31/21 00:32	106-93-4	
Dibromomethane	ND	ug/L	2.5	2.5		12/31/21 00:32	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		12/31/21 00:32	75-71-8	
1,1-Dichloroethane	**99.4**	ug/L	2.5	2.5		12/31/21 00:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.5	2.5		12/31/21 00:32	107-06-2	
1,1-Dichloroethene	**368**	ug/L	2.5	2.5		12/31/21 00:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.5	2.5		12/31/21 00:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		12/31/21 00:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		12/31/21 00:32	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		12/31/21 00:32	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.5	2.5		12/31/21 00:32	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		12/31/21 00:32	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		12/31/21 00:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		12/31/21 00:32	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		12/31/21 00:32	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	2.5		12/31/21 00:32	87-68-3	
2-Hexanone	ND	ug/L	12.5	2.5		12/31/21 00:32	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.5	2.5		12/31/21 00:32	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		12/31/21 00:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		12/31/21 00:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		12/31/21 00:32	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		12/31/21 00:32	91-20-3	
Styrene	ND	ug/L	2.5	2.5		12/31/21 00:32	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		12/31/21 00:32	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		12/31/21 00:32	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-1S **Lab ID: 92580514001** Collected: 12/29/21 11:50 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.5	2.5		12/31/21 00:32	127-18-4	
Toluene	ND	ug/L	2.5	2.5		12/31/21 00:32	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		12/31/21 00:32	120-82-1	
1,1,1-Trichloroethane	**49.2**	ug/L	2.5	2.5		12/31/21 00:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		12/31/21 00:32	79-00-5	
Trichloroethene	ND	ug/L	2.5	2.5		12/31/21 00:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		12/31/21 00:32	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		12/31/21 00:32	96-18-4	
Vinyl acetate	ND	ug/L	5.0	2.5		12/31/21 00:32	108-05-4	
Vinyl chloride	**3.8**	ug/L	2.5	2.5		12/31/21 00:32	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		12/31/21 00:32	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		12/31/21 00:32	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		12/31/21 00:32	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	103	%	70-130	2.5		12/31/21 00:32	460-00-4	
1,2-Dichloroethane-d4 (S)	88	%	70-130	2.5		12/31/21 00:32	17060-07-0	
Toluene-d8 (S)	106	%	70-130	2.5		12/31/21 00:32	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**294**	ug/L	10.0	5		01/04/22 13:10	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	5		01/04/22 13:10	17060-07-0	
Toluene-d8 (S)	94	%	66-133	5		01/04/22 13:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-2S **Lab ID: 92580514002** Collected: 12/29/21 12:00 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		01/04/22 14:18	67-64-1	
Benzene	ND	ug/L	2.0	2		01/04/22 14:18	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		01/04/22 14:18	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		01/04/22 14:18	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		01/04/22 14:18	75-27-4	
Bromoform	ND	ug/L	2.0	2		01/04/22 14:18	75-25-2	
Bromomethane	ND	ug/L	4.0	2		01/04/22 14:18	74-83-9	v1
2-Butanone (MEK)	ND	ug/L	10.0	2		01/04/22 14:18	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		01/04/22 14:18	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		01/04/22 14:18	108-90-7	
Chloroethane	ND	ug/L	2.0	2		01/04/22 14:18	75-00-3	L1
Chloroform	ND	ug/L	2.0	2		01/04/22 14:18	67-66-3	
Chloromethane	ND	ug/L	2.0	2		01/04/22 14:18	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		01/04/22 14:18	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		01/04/22 14:18	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		01/04/22 14:18	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		01/04/22 14:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		01/04/22 14:18	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		01/04/22 14:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		01/04/22 14:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		01/04/22 14:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		01/04/22 14:18	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		01/04/22 14:18	75-71-8	
1,1-Dichloroethane	**32.7**	ug/L	2.0	2		01/04/22 14:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		01/04/22 14:18	107-06-2	
1,1-Dichloroethene	**184**	ug/L	2.0	2		01/04/22 14:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		01/04/22 14:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		01/04/22 14:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		01/04/22 14:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		01/04/22 14:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		01/04/22 14:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		01/04/22 14:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		01/04/22 14:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		01/04/22 14:18	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		01/04/22 14:18	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		01/04/22 14:18	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		01/04/22 14:18	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		01/04/22 14:18	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		01/04/22 14:18	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		01/04/22 14:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		01/04/22 14:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		01/04/22 14:18	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		01/04/22 14:18	91-20-3	
Styrene	ND	ug/L	2.0	2		01/04/22 14:18	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		01/04/22 14:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		01/04/22 14:18	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-2S **Lab ID: 92580514002** Collected: 12/29/21 12:00 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.0	2		01/04/22 14:18	127-18-4	
Toluene	ND	ug/L	2.0	2		01/04/22 14:18	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		01/04/22 14:18	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		01/04/22 14:18	120-82-1	
1,1,1-Trichloroethane	**147**	ug/L	2.0	2		01/04/22 14:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		01/04/22 14:18	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		01/04/22 14:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		01/04/22 14:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		01/04/22 14:18	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		01/04/22 14:18	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		01/04/22 14:18	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		01/04/22 14:18	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		01/04/22 14:18	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		01/04/22 14:18	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	70-130	2		01/04/22 14:18	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-130	2		01/04/22 14:18	17060-07-0	
Toluene-d8 (S)	104	%	70-130	2		01/04/22 14:18	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**207**	ug/L	8.0	4		01/04/22 12:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	4		01/04/22 12:51	17060-07-0	
Toluene-d8 (S)	96	%	66-133	4		01/04/22 12:51	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-3S **Lab ID: 92580514003** Collected: 12/29/21 12:05 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		12/30/21 22:48	67-64-1	
Benzene	ND	ug/L	1.0	1		12/30/21 22:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/30/21 22:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/30/21 22:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/30/21 22:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/30/21 22:48	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/30/21 22:48	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		12/30/21 22:48	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/30/21 22:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/30/21 22:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/30/21 22:48	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/30/21 22:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/30/21 22:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/30/21 22:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/30/21 22:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		12/30/21 22:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/30/21 22:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/30/21 22:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/30/21 22:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 22:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 22:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 22:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/30/21 22:48	75-71-8	
1,1-Dichloroethane	**2.3**	ug/L	1.0	1		12/30/21 22:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/30/21 22:48	107-06-2	
1,1-Dichloroethene	**3.2**	ug/L	1.0	1		12/30/21 22:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/30/21 22:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/30/21 22:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/30/21 22:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/30/21 22:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/30/21 22:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/30/21 22:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/30/21 22:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/30/21 22:48	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/30/21 22:48	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/30/21 22:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		12/30/21 22:48	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/30/21 22:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/30/21 22:48	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/30/21 22:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/30/21 22:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/30/21 22:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/30/21 22:48	91-20-3	
Styrene	ND	ug/L	1.0	1		12/30/21 22:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/30/21 22:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/30/21 22:48	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-3S **Lab ID: 92580514003** Collected: 12/29/21 12:05 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		12/30/21 22:48	127-18-4	
Toluene	ND	ug/L	1.0	1		12/30/21 22:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/30/21 22:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/30/21 22:48	120-82-1	
1,1,1-Trichloroethane	**5.2**	ug/L	1.0	1		12/30/21 22:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/30/21 22:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/30/21 22:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/30/21 22:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/30/21 22:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/30/21 22:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/30/21 22:48	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/30/21 22:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/30/21 22:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/30/21 22:48	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		12/30/21 22:48	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	70-130	1		12/30/21 22:48	17060-07-0	
Toluene-d8 (S)	106	%	70-130	1		12/30/21 22:48	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**11.1**	ug/L	2.0	1		01/03/22 17:12	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		01/03/22 17:12	17060-07-0	
Toluene-d8 (S)	100	%	66-133	1		01/03/22 17:12	2037-26-5	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-1D **Lab ID: 92580514004** Collected: 12/29/21 12:15 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	50.0	2		12/31/21 00:15	67-64-1	
Benzene	ND	ug/L	2.0	2		12/31/21 00:15	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		12/31/21 00:15	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		12/31/21 00:15	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		12/31/21 00:15	75-27-4	
Bromoform	ND	ug/L	2.0	2		12/31/21 00:15	75-25-2	
Bromomethane	ND	ug/L	4.0	2		12/31/21 00:15	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	10.0	2		12/31/21 00:15	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		12/31/21 00:15	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		12/31/21 00:15	108-90-7	
Chloroethane	**5.8**	ug/L	2.0	2		12/31/21 00:15	75-00-3	
Chloroform	ND	ug/L	2.0	2		12/31/21 00:15	67-66-3	
Chloromethane	ND	ug/L	2.0	2		12/31/21 00:15	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		12/31/21 00:15	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		12/31/21 00:15	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	2		12/31/21 00:15	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		12/31/21 00:15	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		12/31/21 00:15	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		12/31/21 00:15	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		12/31/21 00:15	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		12/31/21 00:15	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		12/31/21 00:15	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		12/31/21 00:15	75-71-8	
1,1-Dichloroethane	**51.4**	ug/L	2.0	2		12/31/21 00:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		12/31/21 00:15	107-06-2	
1,1-Dichloroethene	**202**	ug/L	2.0	2		12/31/21 00:15	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		12/31/21 00:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		12/31/21 00:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		12/31/21 00:15	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		12/31/21 00:15	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		12/31/21 00:15	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		12/31/21 00:15	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		12/31/21 00:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		12/31/21 00:15	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		12/31/21 00:15	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		12/31/21 00:15	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	2		12/31/21 00:15	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		12/31/21 00:15	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		12/31/21 00:15	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		12/31/21 00:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		12/31/21 00:15	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		12/31/21 00:15	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		12/31/21 00:15	91-20-3	
Styrene	ND	ug/L	2.0	2		12/31/21 00:15	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		12/31/21 00:15	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		12/31/21 00:15	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-1D **Lab ID: 92580514004** Collected: 12/29/21 12:15 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	2.0	2		12/31/21 00:15	127-18-4	
Toluene	ND	ug/L	2.0	2		12/31/21 00:15	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		12/31/21 00:15	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		12/31/21 00:15	120-82-1	
1,1,1-Trichloroethane	**4.5**	ug/L	2.0	2		12/31/21 00:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		12/31/21 00:15	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		12/31/21 00:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		12/31/21 00:15	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		12/31/21 00:15	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		12/31/21 00:15	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		12/31/21 00:15	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		12/31/21 00:15	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		12/31/21 00:15	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		12/31/21 00:15	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	2		12/31/21 00:15	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	70-130	2		12/31/21 00:15	17060-07-0	
Toluene-d8 (S)	106	%	70-130	2		12/31/21 00:15	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**83.7**	ug/L	2.0	1		01/03/22 17:32	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		01/03/22 17:32	17060-07-0	
Toluene-d8 (S)	99	%	66-133	1		01/03/22 17:32	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-2D **Lab ID: 92580514005** Collected: 12/29/21 12:20 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		12/30/21 23:05	67-64-1	
Benzene	ND	ug/L	1.0	1		12/30/21 23:05	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/30/21 23:05	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/30/21 23:05	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/30/21 23:05	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/30/21 23:05	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/30/21 23:05	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		12/30/21 23:05	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/30/21 23:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/30/21 23:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/30/21 23:05	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/30/21 23:05	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/30/21 23:05	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/30/21 23:05	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/30/21 23:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		12/30/21 23:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/30/21 23:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/30/21 23:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/30/21 23:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 23:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 23:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 23:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/30/21 23:05	75-71-8	
1,1-Dichloroethane	**20.2**	ug/L	1.0	1		12/30/21 23:05	75-34-3	
1,2-Dichloroethane	**1.1**	ug/L	1.0	1		12/30/21 23:05	107-06-2	
1,1-Dichloroethene	**120**	ug/L	1.0	1		12/30/21 23:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/30/21 23:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/30/21 23:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/30/21 23:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/30/21 23:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/30/21 23:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/30/21 23:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/30/21 23:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/30/21 23:05	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/30/21 23:05	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/30/21 23:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		12/30/21 23:05	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/30/21 23:05	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/30/21 23:05	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/30/21 23:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/30/21 23:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/30/21 23:05	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/30/21 23:05	91-20-3	
Styrene	ND	ug/L	1.0	1		12/30/21 23:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/30/21 23:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/30/21 23:05	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: RW-2D **Lab ID: 92580514005** Collected: 12/29/21 12:20 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		12/30/21 23:05	127-18-4	
Toluene	ND	ug/L	1.0	1		12/30/21 23:05	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/30/21 23:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/30/21 23:05	120-82-1	
1,1,1-Trichloroethane	**4.0**	ug/L	1.0	1		12/30/21 23:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/30/21 23:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/30/21 23:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/30/21 23:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/30/21 23:05	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/30/21 23:05	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/30/21 23:05	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/30/21 23:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/30/21 23:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/30/21 23:05	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		12/30/21 23:05	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130	1		12/30/21 23:05	17060-07-0	
Toluene-d8 (S)	106	%	70-130	1		12/30/21 23:05	2037-26-5	
8260D MSV SIM	Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte							
1,4-Dioxane (p-Dioxane)	**85.1**	ug/L	2.0	1		01/03/22 17:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		01/03/22 17:51	17060-07-0	
Toluene-d8 (S)	99	%	66-133	1		01/03/22 17:51	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: TRIP BLANK B **Lab ID: 92580514006** Collected: 12/29/21 00:00 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Acetone	ND	ug/L	25.0	1		12/30/21 19:18	67-64-1	
Benzene	ND	ug/L	1.0	1		12/30/21 19:18	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/30/21 19:18	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/30/21 19:18	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/30/21 19:18	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/30/21 19:18	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/30/21 19:18	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		12/30/21 19:18	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/30/21 19:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/30/21 19:18	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/30/21 19:18	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/30/21 19:18	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/30/21 19:18	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/30/21 19:18	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/30/21 19:18	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		12/30/21 19:18	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/30/21 19:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/30/21 19:18	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/30/21 19:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 19:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 19:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/30/21 19:18	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/30/21 19:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/30/21 19:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/30/21 19:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/30/21 19:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/30/21 19:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/30/21 19:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/30/21 19:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/30/21 19:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/30/21 19:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/30/21 19:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/30/21 19:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/30/21 19:18	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/30/21 19:18	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/30/21 19:18	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		12/30/21 19:18	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/30/21 19:18	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/30/21 19:18	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/30/21 19:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/30/21 19:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/30/21 19:18	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/30/21 19:18	91-20-3	
Styrene	ND	ug/L	1.0	1		12/30/21 19:18	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/30/21 19:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/30/21 19:18	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Sample: TRIP BLANK B **Lab ID: 92580514006** Collected: 12/29/21 00:00 Received: 12/30/21 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	1		12/30/21 19:18	127-18-4	
Toluene	ND	ug/L	1.0	1		12/30/21 19:18	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/30/21 19:18	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/30/21 19:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/30/21 19:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/30/21 19:18	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/30/21 19:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/30/21 19:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/30/21 19:18	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/30/21 19:18	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/30/21 19:18	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/30/21 19:18	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/30/21 19:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/30/21 19:18	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		12/30/21 19:18	460-00-4	
1,2-Dichloroethane-d4 (S)	85	%	70-130	1		12/30/21 19:18	17060-07-0	
Toluene-d8 (S)	107	%	70-130	1		12/30/21 19:18	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

QC Batch: 669320
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92580514001, 92580514003, 92580514004, 92580514005, 92580514006

METHOD BLANK: 3505103 Matrix: Water
Associated Lab Samples: 92580514001, 92580514003, 92580514004, 92580514005, 92580514006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/30/21 16:23	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/30/21 16:23	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/30/21 16:23	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/30/21 16:23	
1,1-Dichloroethane	ug/L	ND	1.0	12/30/21 16:23	
1,1-Dichloroethene	ug/L	ND	1.0	12/30/21 16:23	
1,1-Dichloropropene	ug/L	ND	1.0	12/30/21 16:23	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/30/21 16:23	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/30/21 16:23	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/30/21 16:23	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	12/30/21 16:23	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/30/21 16:23	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/30/21 16:23	
1,2-Dichloroethane	ug/L	ND	1.0	12/30/21 16:23	
1,2-Dichloropropane	ug/L	ND	1.0	12/30/21 16:23	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/30/21 16:23	
1,3-Dichloropropane	ug/L	ND	1.0	12/30/21 16:23	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/30/21 16:23	
2,2-Dichloropropane	ug/L	ND	1.0	12/30/21 16:23	
2-Butanone (MEK)	ug/L	ND	5.0	12/30/21 16:23	
2-Chlorotoluene	ug/L	ND	1.0	12/30/21 16:23	
2-Hexanone	ug/L	ND	5.0	12/30/21 16:23	
4-Chlorotoluene	ug/L	ND	1.0	12/30/21 16:23	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/30/21 16:23	
Acetone	ug/L	ND	25.0	12/30/21 16:23	
Benzene	ug/L	ND	1.0	12/30/21 16:23	
Bromobenzene	ug/L	ND	1.0	12/30/21 16:23	
Bromochloromethane	ug/L	ND	1.0	12/30/21 16:23	
Bromodichloromethane	ug/L	ND	1.0	12/30/21 16:23	
Bromoform	ug/L	ND	1.0	12/30/21 16:23	
Bromomethane	ug/L	ND	2.0	12/30/21 16:23	v2
Carbon tetrachloride	ug/L	ND	1.0	12/30/21 16:23	
Chlorobenzene	ug/L	ND	1.0	12/30/21 16:23	
Chloroethane	ug/L	ND	1.0	12/30/21 16:23	
Chloroform	ug/L	ND	1.0	12/30/21 16:23	
Chloromethane	ug/L	ND	1.0	12/30/21 16:23	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/30/21 16:23	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/30/21 16:23	
Dibromochloromethane	ug/L	ND	1.0	12/30/21 16:23	
Dibromomethane	ug/L	ND	1.0	12/30/21 16:23	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

METHOD BLANK: 3505103 Matrix: Water
Associated Lab Samples: 92580514001, 92580514003, 92580514004, 92580514005, 92580514006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	12/30/21 16:23	
Diisopropyl ether	ug/L	ND	1.0	12/30/21 16:23	
Ethylbenzene	ug/L	ND	1.0	12/30/21 16:23	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	12/30/21 16:23	
m&p-Xylene	ug/L	ND	2.0	12/30/21 16:23	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/30/21 16:23	
Methylene Chloride	ug/L	ND	5.0	12/30/21 16:23	
Naphthalene	ug/L	ND	1.0	12/30/21 16:23	
o-Xylene	ug/L	ND	1.0	12/30/21 16:23	
p-Isopropyltoluene	ug/L	ND	1.0	12/30/21 16:23	
Styrene	ug/L	ND	1.0	12/30/21 16:23	
Tetrachloroethene	ug/L	ND	1.0	12/30/21 16:23	
Toluene	ug/L	ND	1.0	12/30/21 16:23	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/30/21 16:23	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/30/21 16:23	
Trichloroethene	ug/L	ND	1.0	12/30/21 16:23	
Trichlorofluoromethane	ug/L	ND	1.0	12/30/21 16:23	
Vinyl acetate	ug/L	ND	2.0	12/30/21 16:23	
Vinyl chloride	ug/L	ND	1.0	12/30/21 16:23	
Xylene (Total)	ug/L	ND	1.0	12/30/21 16:23	
1,2-Dichloroethane-d4 (S)	%	85	70-130	12/30/21 16:23	
4-Bromofluorobenzene (S)	%	102	70-130	12/30/21 16:23	
Toluene-d8 (S)	%	107	70-130	12/30/21 16:23	

LABORATORY CONTROL SAMPLE: 3505104

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.9	96	70-130	
1,1,1-Trichloroethane	ug/L	50	51.3	103	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.1	94	70-130	
1,1,2-Trichloroethane	ug/L	50	52.6	105	70-130	
1,1-Dichloroethane	ug/L	50	51.6	103	70-130	
1,1-Dichloroethene	ug/L	50	48.9	98	70-132	
1,1-Dichloropropene	ug/L	50	55.1	110	70-131	
1,2,3-Trichlorobenzene	ug/L	50	48.4	97	70-134	
1,2,3-Trichloropropane	ug/L	50	45.0	90	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.3	99	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.4	97	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	47.6	95	70-130	
1,2-Dichlorobenzene	ug/L	50	46.7	93	70-130	
1,2-Dichloroethane	ug/L	50	48.0	96	70-130	
1,2-Dichloropropane	ug/L	50	54.8	110	70-130	
1,3-Dichlorobenzene	ug/L	50	46.3	93	70-130	
1,3-Dichloropropane	ug/L	50	47.7	95	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

LABORATORY CONTROL SAMPLE: 3505104

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	47.1	94	70-130	
2,2-Dichloropropane	ug/L	50	50.1	100	70-130	
2-Butanone (MEK)	ug/L	100	108	108	70-133	
2-Chlorotoluene	ug/L	50	45.1	90	70-130	
2-Hexanone	ug/L	100	84.5	84	70-130	
4-Chlorotoluene	ug/L	50	43.1	86	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.4	96	70-130	
Acetone	ug/L	100	99.4	99	70-144	
Benzene	ug/L	50	51.3	103	70-130	
Bromobenzene	ug/L	50	46.6	93	70-130	
Bromochloromethane	ug/L	50	57.5	115	70-130	
Bromodichloromethane	ug/L	50	50.1	100	70-130	
Bromoform	ug/L	50	50.7	101	70-131	
Bromomethane	ug/L	50	38.8	78	30-177	v2
Carbon tetrachloride	ug/L	50	49.0	98	70-130	
Chlorobenzene	ug/L	50	47.7	95	70-130	
Chloroethane	ug/L	50	41.6	83	46-131	
Chloroform	ug/L	50	51.6	103	70-130	
Chloromethane	ug/L	50	51.8	104	49-130	
cis-1,2-Dichloroethene	ug/L	50	51.4	103	70-130	
cis-1,3-Dichloropropene	ug/L	50	52.5	105	70-130	
Dibromochloromethane	ug/L	50	49.5	99	70-130	
Dibromomethane	ug/L	50	52.4	105	70-130	
Dichlorodifluoromethane	ug/L	50	45.5	91	52-134	
Diisopropyl ether	ug/L	50	51.3	103	70-131	
Ethylbenzene	ug/L	50	45.3	91	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.4	99	70-131	
m&p-Xylene	ug/L	100	90.5	90	70-130	
Methyl-tert-butyl ether	ug/L	50	54.5	109	70-130	
Methylene Chloride	ug/L	50	47.5	95	68-130	
Naphthalene	ug/L	50	47.1	94	70-133	
o-Xylene	ug/L	50	46.5	93	70-130	
p-Isopropyltoluene	ug/L	50	46.3	93	70-130	
Styrene	ug/L	50	47.1	94	70-130	
Tetrachloroethene	ug/L	50	47.9	96	70-130	
Toluene	ug/L	50	50.1	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	52.4	105	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.0	100	70-130	
Trichloroethene	ug/L	50	53.9	108	70-130	
Trichlorofluoromethane	ug/L	50	46.5	93	61-130	
Vinyl acetate	ug/L	100	116	116	70-140	
Vinyl chloride	ug/L	50	51.4	103	59-142	
Xylene (Total)	ug/L	150	137	91	70-130	
1,2-Dichloroethane-d4 (S)	%			89	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			101	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3505105 3505106

Parameter	Units	92580519001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	14.0	19.1	70	95	70-135	30	30	
1,1,1-Trichloroethane	ug/L	3.3	20	20	21.2	27.0	89	118	70-148	24	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	14.6	19.3	73	97	70-131	28	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	16.3	21.6	82	108	70-136	28	30	
1,1-Dichloroethane	ug/L	3.0	20	20	21.0	26.7	90	119	70-147	24	30	
1,1-Dichloroethene	ug/L	45.5	20	20	64.3	70.0	94	122	70-158	9	30	
1,1-Dichloropropene	ug/L	ND	20	20	17.2	23.8	86	119	70-149	33	30	R1
1,2,3-Trichlorobenzene	ug/L	ND	20	20	15.8	19.1	79	96	68-140	19	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	14.1	19.2	70	96	67-137	31	30	R1
1,2,4-Trichlorobenzene	ug/L	ND	20	20	15.5	19.3	77	97	70-139	22	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	14.4	19.1	72	95	69-136	28	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	14.0	19.1	70	95	70-137	31	30	R1
1,2-Dichlorobenzene	ug/L	ND	20	20	14.6	18.9	73	95	70-133	26	30	
1,2-Dichloroethane	ug/L	ND	20	20	16.5	21.9	80	107	67-138	28	30	
1,2-Dichloropropane	ug/L	ND	20	20	17.2	22.9	86	115	70-138	29	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	14.7	19.0	74	95	70-133	25	30	
1,3-Dichloropropane	ug/L	ND	20	20	14.0	18.9	70	94	70-136	30	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	14.8	19.3	74	97	70-133	26	30	
2,2-Dichloropropane	ug/L	ND	20	20	16.8	22.6	84	113	52-155	29	30	
2-Butanone (MEK)	ug/L	ND	40	40	31.6	42.7	79	107	61-147	30	30	
2-Chlorotoluene	ug/L	ND	20	20	14.7	19.2	73	96	70-141	26	30	
2-Hexanone	ug/L	ND	40	40	27.3	35.8	68	90	67-139	27	30	
4-Chlorotoluene	ug/L	ND	20	20	14.2	18.5	71	92	70-135	26	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	30.3	40.6	76	101	67-136	29	30	
Acetone	ug/L	ND	40	40	28.9	39.3	72	98	55-159	30	30	
Benzene	ug/L	ND	20	20	16.6	22.1	83	110	67-150	29	30	
Bromobenzene	ug/L	ND	20	20	14.6	19.1	73	96	70-134	26	30	
Bromochloromethane	ug/L	ND	20	20	18.1	24.5	91	122	70-146	30	30	
Bromodichloromethane	ug/L	ND	20	20	16.0	21.1	80	105	70-138	27	30	
Bromoform	ug/L	ND	20	20	14.6	20.0	73	100	57-138	31	30	R1
Bromomethane	ug/L	ND	20	20	17.1	21.9	86	110	10-200	25	30	
Carbon tetrachloride	ug/L	ND	20	20	16.4	21.7	82	108	70-147	28	30	
Chlorobenzene	ug/L	ND	20	20	15.1	20.1	76	100	70-137	28	30	
Chloroethane	ug/L	ND	20	20	20.7	26.6	104	133	51-166	25	30	
Chloroform	ug/L	ND	20	20	16.9	22.7	84	113	70-144	30	30	
Chloromethane	ug/L	ND	20	20	17.8	23.8	89	119	24-161	29	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	17.5	23.2	88	116	67-148	28	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	15.5	21.0	78	105	70-142	30	30	
Dibromochloromethane	ug/L	ND	20	20	14.1	18.9	71	95	68-138	29	30	
Dibromomethane	ug/L	ND	20	20	16.8	22.3	84	111	70-134	28	30	
Dichlorodifluoromethane	ug/L	ND	20	20	14.3	19.3	71	96	43-155	30	30	
Diisopropyl ether	ug/L	ND	20	20	15.6	21.1	78	106	65-146	30	30	
Ethylbenzene	ug/L	ND	20	20	15.0	19.4	75	97	68-143	26	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	17.4	20.6	87	103	62-151	17	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3505105 3505106

Parameter	Units	92580519001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	40	40	29.8	39.4	75	98	53-157	28	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	15.7	20.9	78	104	59-156	29	30	
Methylene Chloride	ug/L	ND	20	20	16.3	21.9	82	110	64-148	29	30	
Naphthalene	ug/L	ND	20	20	14.5	17.7	72	89	57-150	20	30	
o-Xylene	ug/L	ND	20	20	15.0	19.8	75	99	68-143	28	30	
p-Isopropyltoluene	ug/L	ND	20	20	15.1	19.1	76	96	70-141	23	30	
Styrene	ug/L	ND	20	20	14.9	19.5	75	98	70-136	27	30	
Tetrachloroethene	ug/L	ND	20	20	14.7	19.8	74	99	70-139	29	30	
Toluene	ug/L	ND	20	20	16.9	21.9	84	109	47-157	26	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	17.9	24.1	89	120	70-149	30	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	15.4	20.2	77	101	70-138	27	30	
Trichloroethene	ug/L	ND	20	20	17.0	22.5	85	113	70-149	28	30	
Trichlorofluoromethane	ug/L	ND	20	20	16.6	22.3	83	112	61-154	29	30	
Vinyl acetate	ug/L	ND	40	40	34.1	46.2	85	116	48-156	30	30	v1
Vinyl chloride	ug/L	ND	20	20	17.2	23.6	86	118	55-172	31	30	R1
Xylene (Total)	ug/L	ND	60	60	44.8	59.2	75	99	66-145	28	30	
1,2-Dichloroethane-d4 (S)	%						97	94	70-130			
4-Bromofluorobenzene (S)	%						102	101	70-130			
Toluene-d8 (S)	%						104	102	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

QC Batch: 669651
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92580514002

METHOD BLANK: 3506312 Matrix: Water
Associated Lab Samples: 92580514002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/04/22 12:30	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/04/22 12:30	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/04/22 12:30	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/04/22 12:30	
1,1-Dichloroethane	ug/L	ND	1.0	01/04/22 12:30	
1,1-Dichloroethene	ug/L	ND	1.0	01/04/22 12:30	
1,1-Dichloropropene	ug/L	ND	1.0	01/04/22 12:30	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	01/04/22 12:30	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/04/22 12:30	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	01/04/22 12:30	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	01/04/22 12:30	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/04/22 12:30	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/04/22 12:30	
1,2-Dichloroethane	ug/L	ND	1.0	01/04/22 12:30	
1,2-Dichloropropane	ug/L	ND	1.0	01/04/22 12:30	
1,3-Dichlorobenzene	ug/L	ND	1.0	01/04/22 12:30	
1,3-Dichloropropane	ug/L	ND	1.0	01/04/22 12:30	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/04/22 12:30	
2,2-Dichloropropane	ug/L	ND	1.0	01/04/22 12:30	
2-Butanone (MEK)	ug/L	ND	5.0	01/04/22 12:30	
2-Chlorotoluene	ug/L	ND	1.0	01/04/22 12:30	
2-Hexanone	ug/L	ND	5.0	01/04/22 12:30	
4-Chlorotoluene	ug/L	ND	1.0	01/04/22 12:30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	01/04/22 12:30	
Acetone	ug/L	ND	25.0	01/04/22 12:30	
Benzene	ug/L	ND	1.0	01/04/22 12:30	
Bromobenzene	ug/L	ND	1.0	01/04/22 12:30	
Bromochloromethane	ug/L	ND	1.0	01/04/22 12:30	
Bromodichloromethane	ug/L	ND	1.0	01/04/22 12:30	
Bromoform	ug/L	ND	1.0	01/04/22 12:30	
Bromomethane	ug/L	ND	2.0	01/04/22 12:30	v1
Carbon tetrachloride	ug/L	ND	1.0	01/04/22 12:30	
Chlorobenzene	ug/L	ND	1.0	01/04/22 12:30	
Chloroethane	ug/L	ND	1.0	01/04/22 12:30	
Chloroform	ug/L	ND	1.0	01/04/22 12:30	
Chloromethane	ug/L	ND	1.0	01/04/22 12:30	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/04/22 12:30	
cis-1,3-Dichloropropene	ug/L	ND	1.0	01/04/22 12:30	
Dibromochloromethane	ug/L	ND	1.0	01/04/22 12:30	
Dibromomethane	ug/L	ND	1.0	01/04/22 12:30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

METHOD BLANK: 3506312 Matrix: Water
Associated Lab Samples: 92580514002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	01/04/22 12:30	
Diisopropyl ether	ug/L	ND	1.0	01/04/22 12:30	
Ethylbenzene	ug/L	ND	1.0	01/04/22 12:30	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	01/04/22 12:30	
m&p-Xylene	ug/L	ND	2.0	01/04/22 12:30	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/04/22 12:30	
Methylene Chloride	ug/L	ND	5.0	01/04/22 12:30	
Naphthalene	ug/L	ND	1.0	01/04/22 12:30	
o-Xylene	ug/L	ND	1.0	01/04/22 12:30	
p-Isopropyltoluene	ug/L	ND	1.0	01/04/22 12:30	
Styrene	ug/L	ND	1.0	01/04/22 12:30	
Tetrachloroethene	ug/L	ND	1.0	01/04/22 12:30	
Toluene	ug/L	ND	1.0	01/04/22 12:30	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/04/22 12:30	
trans-1,3-Dichloropropene	ug/L	ND	1.0	01/04/22 12:30	
Trichloroethene	ug/L	ND	1.0	01/04/22 12:30	
Trichlorofluoromethane	ug/L	ND	1.0	01/04/22 12:30	
Vinyl acetate	ug/L	ND	2.0	01/04/22 12:30	
Vinyl chloride	ug/L	ND	1.0	01/04/22 12:30	
Xylene (Total)	ug/L	ND	1.0	01/04/22 12:30	
1,2-Dichloroethane-d4 (S)	%	112	70-130	01/04/22 12:30	
4-Bromofluorobenzene (S)	%	104	70-130	01/04/22 12:30	
Toluene-d8 (S)	%	104	70-130	01/04/22 12:30	

LABORATORY CONTROL SAMPLE: 3506313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.1	94	70-130	
1,1,1-Trichloroethane	ug/L	50	51.1	102	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.7	95	70-130	
1,1,2-Trichloroethane	ug/L	50	48.4	97	70-130	
1,1-Dichloroethane	ug/L	50	50.5	101	70-130	
1,1-Dichloroethene	ug/L	50	49.7	99	70-132	
1,1-Dichloropropene	ug/L	50	51.9	104	70-131	
1,2,3-Trichlorobenzene	ug/L	50	46.1	92	70-134	
1,2,3-Trichloropropane	ug/L	50	44.0	88	70-130	
1,2,4-Trichlorobenzene	ug/L	50	46.2	92	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	49.0	98	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	49.3	99	70-130	
1,2-Dichlorobenzene	ug/L	50	45.5	91	70-130	
1,2-Dichloroethane	ug/L	50	49.5	99	70-130	
1,2-Dichloropropane	ug/L	50	50.7	101	70-130	
1,3-Dichlorobenzene	ug/L	50	46.6	93	70-130	
1,3-Dichloropropane	ug/L	50	46.4	93	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

LABORATORY CONTROL SAMPLE: 3506313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	46.3	93	70-130	
2,2-Dichloropropane	ug/L	50	53.8	108	70-130	
2-Butanone (MEK)	ug/L	100	99.5	100	70-133	
2-Chlorotoluene	ug/L	50	47.2	94	70-130	
2-Hexanone	ug/L	100	91.7	92	70-130	
4-Chlorotoluene	ug/L	50	45.8	92	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	94.0	94	70-130	
Acetone	ug/L	100	107	107	70-144	
Benzene	ug/L	50	47.2	94	70-130	
Bromobenzene	ug/L	50	46.9	94	70-130	
Bromochloromethane	ug/L	50	52.9	106	70-130	
Bromodichloromethane	ug/L	50	49.3	99	70-130	
Bromoform	ug/L	50	48.1	96	70-131	
Bromomethane	ug/L	50	67.7	135	30-177	v1
Carbon tetrachloride	ug/L	50	46.6	93	70-130	
Chlorobenzene	ug/L	50	46.6	93	70-130	
Chloroethane	ug/L	50	77.3	155	46-131	L1
Chloroform	ug/L	50	51.9	104	70-130	
Chloromethane	ug/L	50	47.8	96	49-130	
cis-1,2-Dichloroethene	ug/L	50	50.9	102	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	70-130	
Dibromochloromethane	ug/L	50	48.9	98	70-130	
Dibromomethane	ug/L	50	43.2	86	70-130	
Dichlorodifluoromethane	ug/L	50	45.9	92	52-134	
Diisopropyl ether	ug/L	50	48.1	96	70-131	
Ethylbenzene	ug/L	50	46.8	94	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.1	100	70-131	
m&p-Xylene	ug/L	100	93.5	93	70-130	
Methyl-tert-butyl ether	ug/L	50	49.8	100	70-130	
Methylene Chloride	ug/L	50	51.1	102	68-130	
Naphthalene	ug/L	50	46.8	94	70-133	
o-Xylene	ug/L	50	46.5	93	70-130	
p-Isopropyltoluene	ug/L	50	46.9	94	70-130	
Styrene	ug/L	50	47.5	95	70-130	
Tetrachloroethene	ug/L	50	45.7	91	70-130	
Toluene	ug/L	50	47.4	95	70-130	
trans-1,2-Dichloroethene	ug/L	50	53.4	107	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.2	96	70-130	
Trichloroethene	ug/L	50	47.1	94	70-130	
Trichlorofluoromethane	ug/L	50	51.6	103	61-130	
Vinyl acetate	ug/L	100	102	102	70-140	
Vinyl chloride	ug/L	50	49.9	100	59-142	
Xylene (Total)	ug/L	150	140	93	70-130	
1,2-Dichloroethane-d4 (S)	%			107	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			102	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3506314 3506315

Parameter	Units	92580601016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	200	200	205	201	103	101	70-135	2	30	
1,1,1-Trichloroethane	ug/L	ND	200	200	247	230	123	115	70-148	7	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	200	200	213	206	107	103	70-131	4	30	
1,1,2-Trichloroethane	ug/L	ND	200	200	225	224	113	112	70-136	1	30	
1,1-Dichloroethane	ug/L	ND	200	200	237	228	118	114	70-147	3	30	
1,1-Dichloroethene	ug/L	ND	200	200	239	227	119	114	70-158	5	30	
1,1-Dichloropropene	ug/L	ND	200	200	254	238	127	119	70-149	7	30	
1,2,3-Trichlorobenzene	ug/L	ND	200	200	200	207	100	103	68-140	3	30	
1,2,3-Trichloropropane	ug/L	ND	200	200	203	198	101	99	67-137	3	30	
1,2,4-Trichlorobenzene	ug/L	ND	200	200	202	214	101	107	70-139	6	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	200	200	199	203	99	101	69-136	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	200	200	219	211	109	105	70-137	4	30	
1,2-Dichlorobenzene	ug/L	ND	200	200	199	206	100	103	70-133	3	30	
1,2-Dichloroethane	ug/L	ND	200	200	229	218	114	109	67-138	5	30	
1,2-Dichloropropane	ug/L	ND	200	200	241	227	121	114	70-138	6	30	
1,3-Dichlorobenzene	ug/L	ND	200	200	206	213	103	106	70-133	3	30	
1,3-Dichloropropane	ug/L	ND	200	200	213	207	106	103	70-136	3	30	
1,4-Dichlorobenzene	ug/L	ND	200	200	209	210	105	105	70-133	0	30	
2,2-Dichloropropane	ug/L	ND	200	200	240	224	120	112	52-155	7	30	
2-Butanone (MEK)	ug/L	ND	400	400	502	499	126	125	61-147	1	30	
2-Chlorotoluene	ug/L	ND	200	200	254	254	127	127	70-141	0	30	
2-Hexanone	ug/L	ND	400	400	407	391	102	98	67-139	4	30	
4-Chlorotoluene	ug/L	ND	200	200	210	211	105	106	70-135	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	400	400	425	421	106	105	67-136	1	30	
Acetone	ug/L	ND	400	400	673	631	168	158	55-159	6	30	M1
Benzene	ug/L	228	200	200	443	435	107	104	67-150	2	30	
Bromobenzene	ug/L	ND	200	200	210	217	105	109	70-134	3	30	
Bromochloromethane	ug/L	ND	200	200	243	237	121	118	70-146	3	30	
Bromodichloromethane	ug/L	ND	200	200	214	211	107	106	70-138	1	30	
Bromoform	ug/L	ND	200	200	185	185	92	92	57-138	0	30	
Bromomethane	ug/L	ND	200	200	301	285	146	138	10-200	5	30	v1
Carbon tetrachloride	ug/L	ND	200	200	222	220	111	110	70-147	1	30	
Chlorobenzene	ug/L	ND	200	200	211	210	106	105	70-137	1	30	
Chloroethane	ug/L	ND	200	200	311	231	156	115	51-166	30	30	
Chloroform	ug/L	ND	200	200	248	248	124	124	70-144	0	30	
Chloromethane	ug/L	ND	200	200	217	205	108	103	24-161	6	30	
cis-1,2-Dichloroethene	ug/L	ND	200	200	243	232	121	116	67-148	5	30	
cis-1,3-Dichloropropene	ug/L	ND	200	200	210	208	105	104	70-142	1	30	
Dibromochloromethane	ug/L	ND	200	200	203	202	102	101	68-138	1	30	
Dibromomethane	ug/L	ND	200	200	186	193	93	97	70-134	4	30	
Dichlorodifluoromethane	ug/L	ND	200	200	222	214	111	107	43-155	4	30	
Diisopropyl ether	ug/L	ND	200	200	232	216	116	108	65-146	7	30	
Ethylbenzene	ug/L	1230	200	200	1420	1390	92	78	68-143	2	30	
Hexachloro-1,3-butadiene	ug/L	ND	200	200	223	222	112	111	62-151	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3506314 3506315

Parameter	Units	92580601016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	1460	400	400	1860	1820	101	90	53-157	2	30	
Methyl-tert-butyl ether	ug/L	ND	200	200	228	220	114	110	59-156	4	30	
Methylene Chloride	ug/L	ND	200	200	245	231	122	116	64-148	6	30	
Naphthalene	ug/L	226	200	200	433	440	103	107	57-150	2	30	
o-Xylene	ug/L	376	200	200	590	574	107	99	68-143	3	30	
p-Isopropyltoluene	ug/L	38.6	200	200	264	267	113	114	70-141	1	30	
Styrene	ug/L	ND	200	200	219	215	109	108	70-136	2	30	
Tetrachloroethene	ug/L	ND	200	200	205	203	103	102	70-139	1	30	
Toluene	ug/L	10.8	200	200	229	224	109	107	47-157	2	30	
trans-1,2-Dichloroethene	ug/L	ND	200	200	248	240	124	120	70-149	3	30	
trans-1,3-Dichloropropene	ug/L	ND	200	200	208	211	104	105	70-138	2	30	
Trichloroethene	ug/L	ND	200	200	215	213	107	107	70-149	1	30	
Trichlorofluoromethane	ug/L	ND	200	200	223	217	111	108	61-154	3	30	
Vinyl acetate	ug/L	ND	400	400	465	442	116	110	48-156	5	30	
Vinyl chloride	ug/L	ND	200	200	244	233	122	117	55-172	4	30	
Xylene (Total)	ug/L	1840	600	600	2450	2390	103	93	66-145	2	30	
1,2-Dichloroethane-d4 (S)	%						103	99	70-130			
4-Bromofluorobenzene (S)	%						104	103	70-130			
Toluene-d8 (S)	%						101	102	70-130			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

QC Batch: 669494
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92580514003, 92580514004, 92580514005

METHOD BLANK: 3505593 Matrix: Water
Associated Lab Samples: 92580514003, 92580514004, 92580514005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	01/03/22 14:19	
1,2-Dichloroethane-d4 (S)	%	94	70-130	01/03/22 14:19	
Toluene-d8 (S)	%	92	66-133	01/03/22 14:19	

LABORATORY CONTROL SAMPLE: 3505594

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.8	99	70-130	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
Toluene-d8 (S)	%			90	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3505595 3505596

Parameter	Units	92580514003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	11.1	20	20	31.5	30.3	102	96	64-141	4	30	
1,2-Dichloroethane-d4 (S)	%						90	91	70-130		30	
Toluene-d8 (S)	%						92	92	66-133		30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

QC Batch: 669652
QC Batch Method: EPA 8260D Mod.
Analysis Method: EPA 8260D Mod.
Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92580514001, 92580514002

METHOD BLANK: 3506319 Matrix: Water
Associated Lab Samples: 92580514001, 92580514002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	01/04/22 12:31	
1,2-Dichloroethane-d4 (S)	%	94	70-130	01/04/22 12:31	
Toluene-d8 (S)	%	95	66-133	01/04/22 12:31	

LABORATORY CONTROL SAMPLE: 3506320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.0	100	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
Toluene-d8 (S)	%			97	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3506321 3506322

Parameter	Units	92580514001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	294	100	100	382	405	88	111	64-141	6	30	
1,2-Dichloroethane-d4 (S)	%						92	90	70-130		30	
Toluene-d8 (S)	%						93	91	66-133		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FORMER KOP-FLEX FACILITY SITE
Pace Project No.: 92580514

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92580514001	**RW-1S**	EPA 8260D	669320		
92580514002	**RW-2S**	EPA 8260D	669651		
92580514003	**RW-3S**	EPA 8260D	669320		
92580514004	**RW-1D**	EPA 8260D	669320		
92580514005	**RW-2D**	EPA 8260D	669320		
92580514006	**TRIP BLANK B**	EPA 8260D	669320		
92580514001	**RW-1S**	EPA 8260D Mod.	669652		
92580514002	**RW-2S**	EPA 8260D Mod.	669652		
92580514003	**RW-3S**	EPA 8260D Mod.	669494		
92580514004	**RW-1D**	EPA 8260D Mod.	669494		
92580514005	**RW-2D**	EPA 8260D Mod.	669494		

Pace Analytical®	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: November 15, 2021 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.08	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☒ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: WSP Environmental Strategies

Project #: WO# : 92580514

92580514

Courier: ☐ Commercial ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Date/Initials Person Examining Contents: 12-30-21 JC

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Thermometer: ☒ IR Gun ID: 92TD64 ☒ Wet ☐ Blue ☐ None

Type of Ice:

Cooler Temp: 3.1 **Correction Factor:** Add/Subtract (°C) 0.0

Cooler Temp Corrected (°C): 3.1

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☒ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	4.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☒ N/A	8.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☒ No	☐ N/A	10.
Trip Blank Present?	☒ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☒ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Project # WO#: 92580514

PM: BV Due Date: 01/11/22

CLIENT: 92-WSP

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (3 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1																6													
2																6													
3																6													
4																6													
5																6													
6																3													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (I.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	WSP Environmental Strategies	Report To:	Eric Johnson	Attention:	
Address:	13530 Dulles Technology Drive	Copy To:		Company Name:	
	Herndon, VA 20171			Address:	
Email:	eric.johnson@wsp.com	Purchase Order #:		Pace Quote:	31401545.010/3
Phone:	NONE Fax:	Project Name:	Former Kop-Flex Facility Site - Onsite	Pace Project Manager:	bonnie.vang@pacelabs.com,
Requested Due Date:		Project #:	31401545.010	Pace Profile #:	3610-8

Regulatory Agency	
State / Location	MD

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	VOC by 8260	1,4-Dioxane	Trip BLANK	Residual Chlorine (Y/N)	92580514
1	RW-1S	WT	G			12/29/21	1150		6									X	X			001
2	RW-2S	WT	G			12/29/21	~~1155~~ 1200		6									X	X			002
3	RW-3S	WT	G			12/29/21	~~1200~~ 1205		6									X	X			003
4	RW-10	WT	G			12/29/21	1215		6									X	X			004
5	RW-2D	WT	G			12/29/21	1220		6									X	X			005
6	Trip Blank-B					12/29/21			3											X		006
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Elliott Martynkiewicz	12/29/21	1335	Pace HVC	12/30/21	1430	3.1	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Elliott Martynkiewicz

SIGNATURE of SAMPLER: Elliott Martynkiewicz DATE Signed: 12/29/21

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)